Smithsonian

June 1990

Chameleons

Lizards with coats of many colors (p. 44)

OH, WHAT A THORNY BUSINESS this thing called money can be.

So desirable. And yet, in one's effort to touch it, to acquire it for one's own, a dilemma unfolds.

There is first the consuming problem of where to put the money.

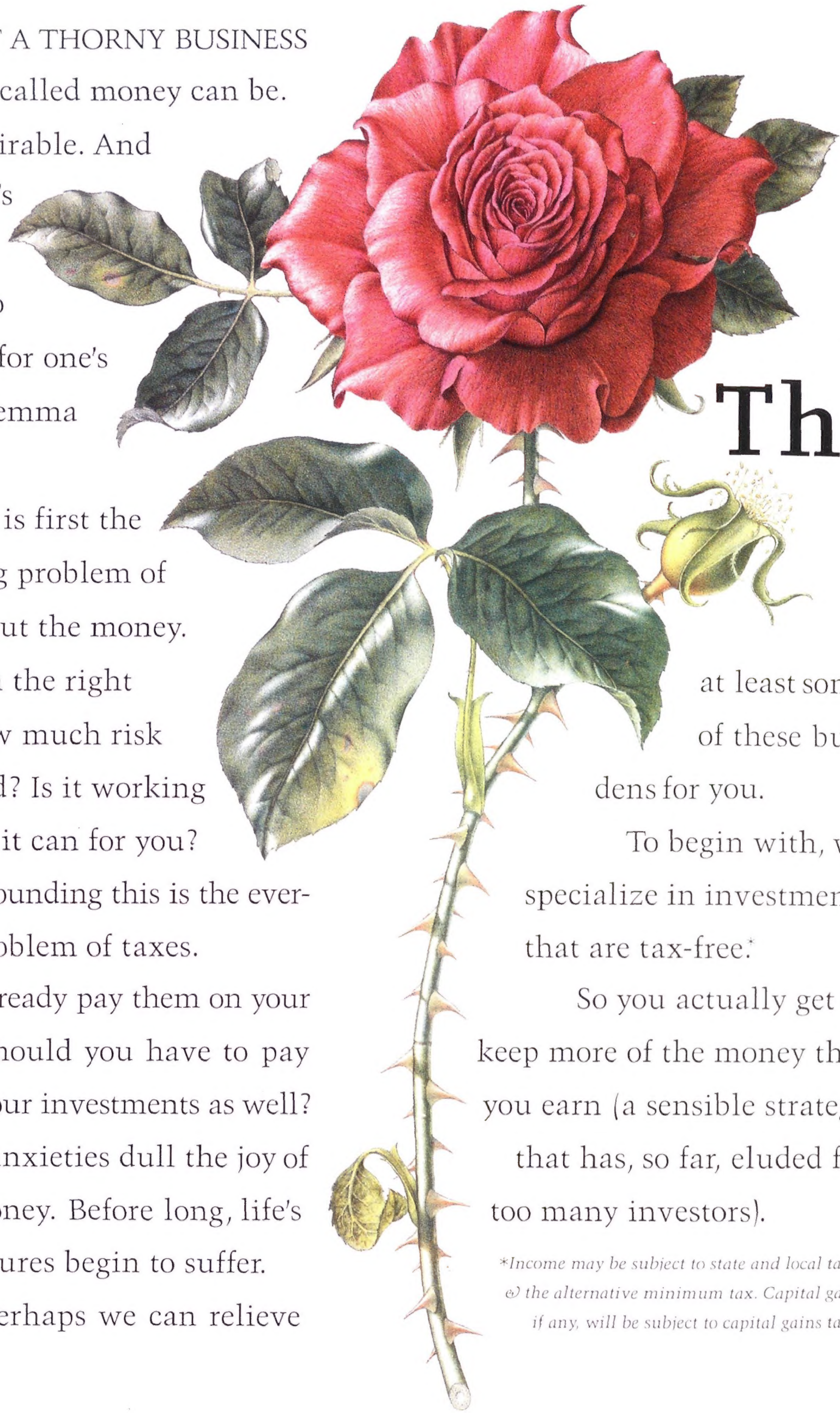
Is it in the right place? How much risk is involved? Is it working as hard as it can for you?

Compounding this is the ever-present problem of taxes.

You already pay them on your income. Should you have to pay them on your investments as well?

Such anxieties dull the joy of having money. Before long, life's little pleasures begin to suffer.

But perhaps we can relieve



The

at least some of these burdens for you.

To begin with, we specialize in investments that are tax-free.*

So you actually get to keep more of the money that you earn (a sensible strategy that has, so far, eluded far too many investors).

**Income may be subject to state and local taxes, & the alternative minimum tax. Capital gains, if any, will be subject to capital gains taxes.*

And with nearly 100 years experience, we have an insight into the municipal bond business that, in our opinion, few other companies can match.

In fact, every single year we review billions of dollars worth of bonds.

And only after a painstaking process of research do we finally invest in a select few (including some of those undervalued municipal bonds that other companies have simply overlooked).

In short, you'll find we're quite capable of providing a variety of interesting investments (for both current and future income).

If you'd like to discuss money, and the joy of having it, simply contact your investment adviser, or personal banker. Or call us, toll-free, at 1-800-524-6500.

We'd like to send you a free booklet, and share with you some things we learned when first we entered this rose garden, a long, long time ago.

Unfortunate Burden Of Making Money.

For more complete information on Nuveen tax-free open end mutual funds and unit trusts, including charges and expenses, call for a prospectus. Read it carefully before you invest or send money.

NUVEEN

Specialists In Tax-free Investments Since 1898.

June 1990

Smithsonian

Volume 21, Number 3

Table of Contents

Cover: Rainbow-hued *Chamaeleo pardalis* is a large-sized species found in Madagascar; it is about 15 inches long and has a head the size of a plum (p. 44)
Photograph by Art Wolfe

10 *Smithsonian horizons* by Secretary Adams
12 *Letters to the Editor*
16 *Picture credits*
18 *Around the Mall and beyond* by Edwards Park
24 *Phenomena, comment and notes* by John P. Wiley jr.

30 **Where old ships go to die—and be recycled**
On Gadani Beach in Pakistan, Pathan tribesmen ply the perilous shipbreaking trade by hand, and little else
By Mary Anne Weaver, photographs by Kay Chernush

44 **Chameleons: now you see 'em, now you don't**
Full of bravado, the delicate minimonsters can scare off a pack of wild dogs, but their future is shaky
By James Martin, photographs by Art Wolfe

56 **Doing a double take on Jasper Johns**
Two lavish exhibits of prints and drawings celebrate his fascination with the complexity of the commonplace
By Helen Dudar

70 **Have you hugged your computer today?**
At MIT's Media Lab they're working—and playing—to enhance the relationship between us and our PCs
By Fred Hapgood, photographs by Yoav Levy

88 **It was like trying to get into heaven**
Or so it seemed to the 12 million immigrants who disembarked at Ellis Island, the gateway to America
By Thomas A. Bass

100 **Fantasy baseball à la Rotisserie**
In this game, folks "owning" teams of real players compete (madly) by using each player's statistics
By Nathan Cobb, illustrations by Robert Byrd

116 **It's Gothic and glorious—and it's done!**
Under construction for 83 years, Washington National Cathedral has been the capstone of many lives
By Stanley Meisler, photographs by Robert Llewellyn

132 **Said Henry Adams: 'Among us, we know all mankind'**
From poets to Presidents, everyone who was anyone was a friend of Adams' elite circle, the Five of Hearts
By Patricia O'Toole

148 *Book reviews*
159 *Additional reading*
161 *June events at the Smithsonian*
166 *Smithsonian tours, seminars and expeditions*

168 **Ah, sweet mystery of . . . well, not exactly love**
By Barbara Kingsolver

Smithsonian (ISSN 0037-7333) is published monthly by the Smithsonian Associates, 900 Jefferson Drive, Washington, DC 20560.
© Smithsonian Institution 1990. All rights reserved.
Reproduction in whole or in part without permission is prohibited.
Subscription price $20 a year in U.S. and possessions, $33 elsewhere. 80 percent of dues is designated for magazine subscription. Single copy price, $2.50. Second-class postage paid at Washington, DC and additional mailing offices.
Editorial offices at 900 Jefferson Drive, Washington, DC 20560.
Advertising and circulation offices at 420 Lexington Ave., New York, NY 10170.
Members: Please address all subscription correspondence and change of address information to Smithsonian, P.O. Box 55593, Boulder, CO 80322-5593.
Postmaster: Send address changes to Smithsonian, P.O. Box 55593, Boulder, CO 80302-5593.

WE KNOW HOW PRECIOUS YOUR CARGO CAN BE.

THAT'S WHY WE BUILT THE NEW 1991 TOYOTA PREVIA.

You know what makes children so special? Everything. We feel the same way about our new Previa. The way it handles is special. The way it generates 138 horsepower from its 2.4-liter engine is special. The way it pampers and performs. The way it gives you the space and comfort your family needs—even the way it looks. Everything about Previa is special. But it has to be. Look at the cargo it's going to carry. So before you place your kids in just any car, think about it. You went all over town looking for the perfect crib. Go down to your Toyota dealer and see the perfect family car. It's Previa. It's here. And it's like nothing you've ever seen.

"I love what you do for me."

TOYOTA

Call 1-800-GO-TOYOTA if you'd like more information or the location of your nearest dealer. Get More From Life...Buckle Up!

© 1990 Toyota Motor Sales, U.S.A., Inc.

The Adams Room is even brighter when the maitre d', Gastone, greets me by name.

That's why I call the Hay-Adams *my* hotel in Washington, D.C.

The Hay-Adams Hotel

Preferred Hotels

Across from the White House at One Lafayette Square

Washington, D.C.
(202) 638-6600, (800) 424-5054

Does the "replica" outperform the famous original?

Mount Fuji Ceramic Pen only $39.95*

**But read this ad for an even better deal.*

One of the world's truly fine line of products is that of Europe's Montblanc pens, appropriately named after that continent's highest mountain. If you have ever written with a Montblanc pen, you know that writing with them is a delight and almost effortless. One substantial drawback, however, as with so many luxuries, is that their price is awfully high. It is easy to spend $150 or more for one of them. Our Japanese friends have created a "replica" of this outstanding pen, which (except for one small detail—it doesn't have that 6-pointed star on the top) is almost indistinguishable in appearance, heft and feel. Not surprisingly, they called it *Mount Fuji*. It has the same hi-lacquer finish, with goldtone accents, as the famous original. The ceramic writing tip provides silk-smooth, effortless writing. It will never flatten or skip, even after hardest and longest use.

•The great reservoir of the Mount Fuji Ceramic Pen holds enough ink to draw a line 6.3 miles long. That is enough to write a medium-size novel. But just in case your literary requirements go beyond that, we include an extra tip and an extra ink reservoir.

The most remarkable thing about the *Mount Fuji Ceramic Pen* is its price. We are the exclusive direct mail distributors of this splendid writing instrument and can offer it therefore for just $39.95. But, we have an even better deal: ***Buy two for $79.90, and we'll send you a third one, with our compliments—absolutely FREE!*** Discard those tacky ballpoint pens and those clumsy felt tips. Write smoothly and easily, give character and good appearance to your writing. And make a really great buy. Treat yourself to better writing and get your *Mount Fuji Ceramic Pen(s)* today!

FOR FASTEST SERVICE, ORDER
TOLL FREE (800) 882-3050
24 hours a day, 7 days a week

Please give order **Code #4800A362** for *Mount Fuji Ceramic Pen*. If you prefer, mail check or card authorization and expiration. We need daytime phone for all orders and issuing bank for charge orders. UPS/insurance: $4.95 for one *Mount Fuji Ceramic Pen* and $6.95 for three. Add sales tax for CA delivery. You have 30 day return and one year warranty.

For quantity orders (100+), call Ernest Gerard, our Wholesale/Premium Manager at (415) 543-6570 or write him at the address below.

since 1967
haverhills®
131 Townsend Street, San Francisco, CA 94107

Smithsonian

SECRETARY OF THE SMITHSONIAN INSTITUTION:
Robert McC. Adams

EDITOR:
Don Moser

BOARD OF EDITORS:
Constance A. Bond
Caroline Despard, Pictures
Jim Doherty
Timothy Foote
Marlane A. Liddell
Bennett Schiff
Nancy Seaman
Paul Trachtman
John P. Wiley jr.

ASSOCIATE EDITORS:
Diane M. Bolz
Kathleen M. Burke
Frances R. Glennon
Sally Scott Maran
Edgar Rich, Pictures
Jane D. Scholl

ASSISTANT EDITORS:
Suzanne Crawford
Judy Harkison
Bruce Hathaway
W. Eric Keller
Alison C. McLean
Lucinda Moore
Beth Py-Lieberman
Ruth Ravenel, Pictures

CONTRIBUTING EDITORS:
Ralph Backlund
Edwards Park

EDITORIAL ASSOCIATES:
Gloria Carr
Margot North

PUBLISHER:
Joseph J. Bonsignore
Mary D. Haskin, Assistant

ADVERTISING:
Thomas H. Black, Associate Publisher
Edward A. Daly, Manager
Robert F. Donovan, Associate Manager
Frederick T. Lyons, Eastern Manager

CIRCULATION:
John O'Donnell, Associate Publisher
Adeline Sherr, Director

ADMINISTRATION:
Carey O. Randall, Associate Publisher
Mary Ellen Bobb, Business Director
Valerie Martin, Business Manager

PRODUCTION:
E. Cherry Doyle, Director
Greg Williams, Quality Manager
Briggs S. Cunningham, Editorial
Suzanne Kennedy, Advertising

FOUNDER:
S. Dillon Ripley

EDITOR AND PUBLISHER EMERITUS:
Edward K. Thompson

SENIOR CIRCULATION CONSULTANT:
Anne Keating

In just one minute, this man's skin will calm down.

The redness, the razor burn, the after-shave discomforts that usually bother him will simply go away.

Because his skin has found a friend: Clinique Post-Shave Healer.

Post-Shave Healer is the gentle balm for razor-recovering skin. Rich in aloe, it's the cool, comforting touch that calms shaving irritations.

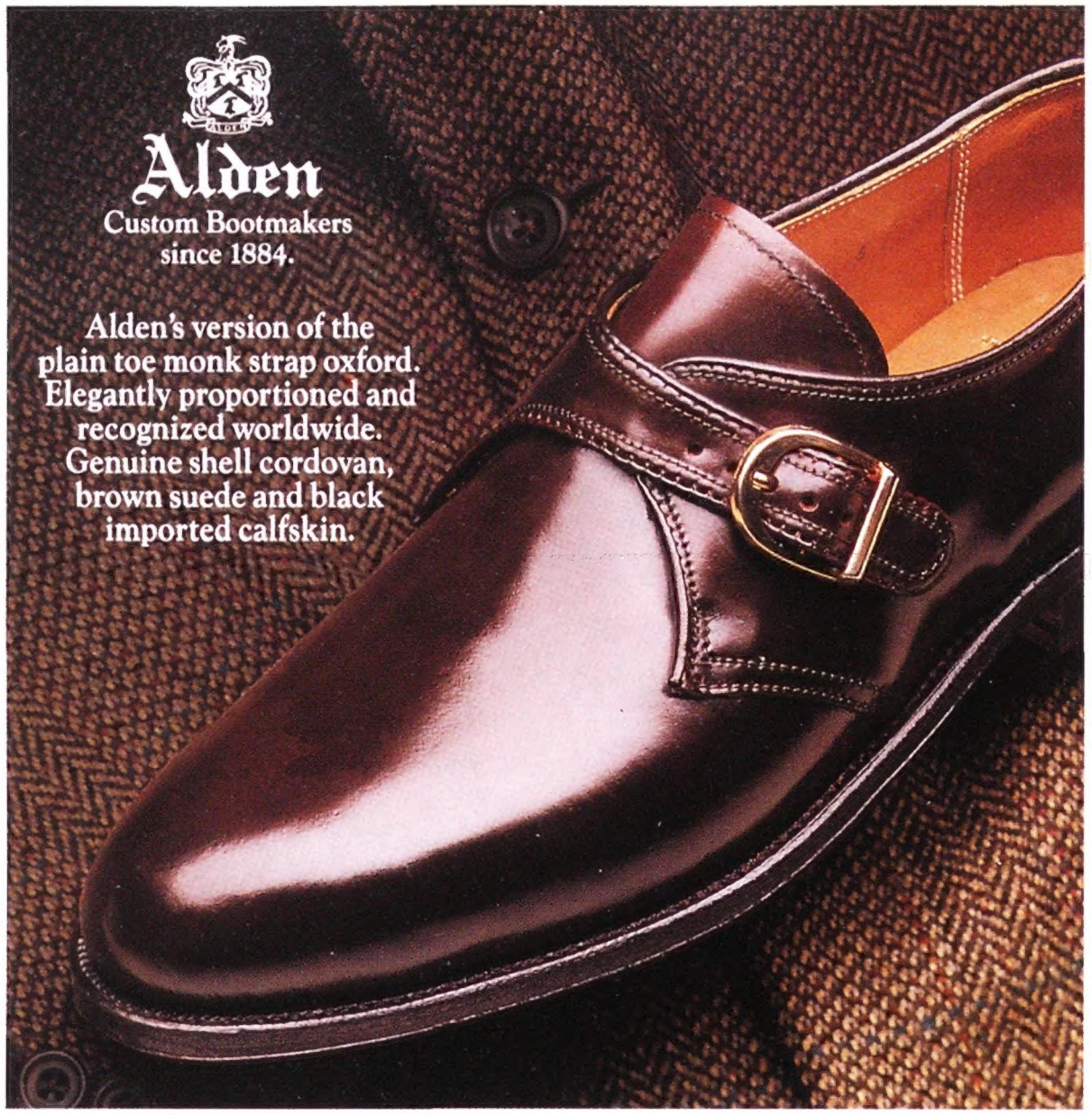
Post-Shave Healer sinks in to soothe instantly. Leaves no stickiness, causes no pore-clogging. Helps heal minor cuts. Comes in a portable flask.

You'll find it—plus a fast free skin analysis—at any Clinique counter.

Post-Shave Healer. For any skin that suffers from shaving, it brings welcome relief. Posthaste.

CLINIQUE
SKIN SUPPLIES FOR MEN

© Clinique Laboratories, Inc.



For complete store listing and illustrated brochure, write: Alden Shoe Company, Dept. 6S, Middleborough, MA 02346.

Locomotion...

With its spectacular steam locomotive, sleek Pullman cars and a glorious route – along the Pacific coast from Los Angeles to San Francisco – the Southern Pacific Daylight earned the title, "The World's Most Beautiful Train".

Now the "Daylight", circa 1937, travels as the second hand on this quality Swiss quartz watch, taking a turn around the raised track every minute. *It really moves!*

Gold-plated brass casing. Black leather band. Attractively packaged in a jeweler's box. Men's and ladies' sizes available. One year limited warranty.

Only **$99.95** + $3.00 shipping and handling. Florida residents add sales tax.

Actual size
(male)

© 1990 TIME IN MOTION

Simply mail in your order or call Toll Free:

S-6

Name _____

Address _____

City _____ State ____ Zip _____

Specify: ☐ Men's style ☐ Ladies style

☐ Check Enclosed Charge by: ☐ MasterCard ☐ Visa

Acct. # _____ Exp. Date _____

Signature _____

Mail to: **Time In Motion • P.O. Box 811535 • Boca Raton, FL 33481-1535 • 1-800-533-7009**

Time in Motion®

Smithsonian

Board of Regents
Smithsonian Institution

Ex Officio

Chief Justice of the United States
William H. Rehnquist, Chancellor
Vice President of the United States
J. Danforth Quayle

Appointed by the President of the Senate

Hon. E. J. (Jake) Garn
Hon. Daniel P. Moynihan
Hon. James R. Sasser

Appointed by the Speaker of the House

Hon. Silvio O. Conte
Hon. Norman Y. Mineta
Hon. Jamie L. Whitten

Appointed by Joint Resolution of Congress

Hon. David C. Acheson
Hon. Anne L. Armstrong
Dr. William G. Bowen
Mrs. Jeannine Smith Clark
Hon. A. Leon Higginbotham jr.
Mr. Samuel C. Johnson
Mr. Barnabas McHenry
Dr. Homer A. Neal
Hon. R. James Woolsey

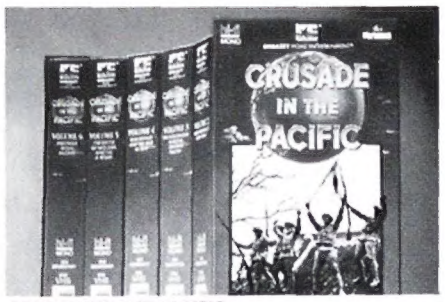
National Board of the
Smithsonian Associates

Mrs. Gay F. Wray, Chairman
Mr. Philip F. Anschutz
Mrs. Robert M. Bass
Mr. George B. Bingham jr.
Mr. W. J. Bowen
Mr. Charles L. Brown
Mr. Dan Burns
Mr. Fletcher Byrom
Mrs. Cummins Catherwood jr.
Mr. Ivan Chermayeff
Mr. Jeffrey A. Cole
Mr. Thomas G. Cousins
Mrs. George C. Dillon
Mr. James H. Evans
Mrs. Robert R. Gray
Mr. Peter E. Haas
Mr. John M. Harbert III
Hon. Ulric St. Clair Haynes jr.
Mr. Gerald D. Hines
Mr. Frank W. Hoch
Mr. S. Charles Kemp
Mr. Thomas M. Keresey
Mr. Robert V. Lindsay
Mr. Alexander K. McLanahan
Mr. Antony Merck
Mrs. Anne Murray Morgan
Mr. John W. Morrison
Dr. George E. Mueller
Mr. Jack S. Parker
Mr. Thomas J. Pritzker
Mr. Alvin N. Puryear
Mrs. Arthur M. Sackler
Mr. Leveo V. Sanchez
Mr. Lloyd G. Schermer
Mr. Charles W. Schmidt
Dr. Ivan Selin
Mrs. E. Maynard Smith
Mr. A. Alfred Taubman
Mrs. James M. Walton
Hon. John C. Whitehead
Mr. T. Evans Wyckoff

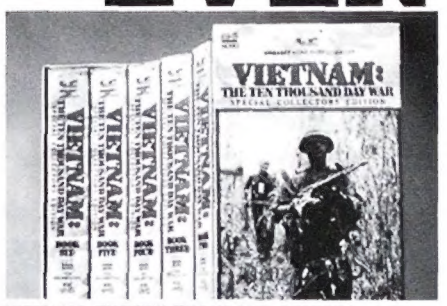
Honorary Members

Mr. William S. Anderson
Mr. Richard P. Cooley
Mr. Joseph F. Cullman III
Mr. Charles D. Dickey jr.
Hon. Leonard K. Firestone
Mr. Alfred C. Glassell jr.
Mr. W. L. Hadley Griffin
Hon. William A. Hewitt
Mr. James M. Kemper jr.
Mr. Seymour H. Knox III
Mr. Lewis A. Lapham
Hon. George C. McGhee
Justice Sandra D. O'Connor
Mr. S. Dillon Ripley
Mr. Francis C. Rooney jr.
Hon. Thomas J. Watson jr.

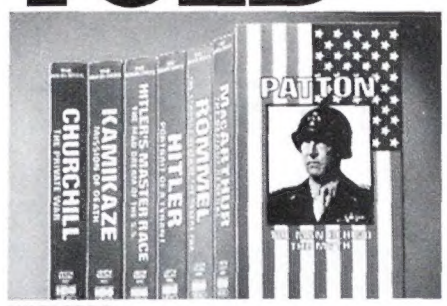
THE GREATEST WAR STORIES EVER TOLD



CRUSADE IN THE PACIFIC
Six-cassette collector's series. Documentary look at American forces at war in the Pacific theater. The Solomons, MacArthur, Iwo Jima, A-Bomb, postwar Pacific, more.
1227132 Price ~~$149.95~~ Now $19.95



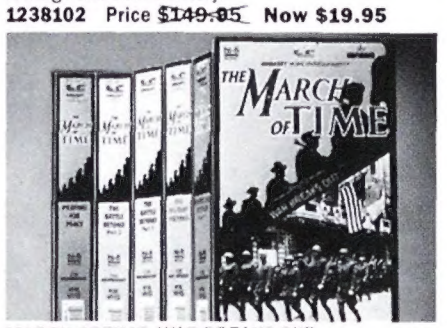
VIETNAM: THE TEN-THOUSAND-DAY WAR
Six volumes of this vivid and provocative documentary, from the historical background to the fall of Saigon—and beyond. Interviews, battle footage and commentary.
1238102 Price ~~$149.95~~ Now $19.95



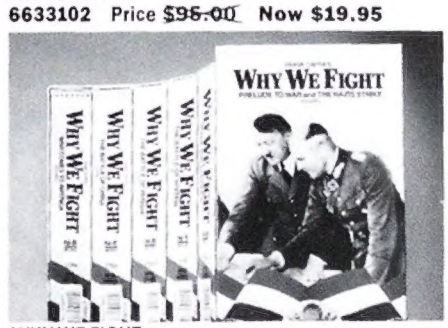
WARLORDS
Seven classic videos featuring the famous—and infamous—war leaders of WWII, including MacArthur, Patton, Hitler, Churchill, Rommel and others.
6633102 Price ~~$95.00~~ Now $19.95

MARCH OF TIME: AMERICA AT WAR
The original Academy Award-winning newsreels produced for 16 years by TIME Magazine and seen in 50,000 theaters around the world. Six cassettes.
1279282 Price ~~$149.95~~ Now $19.95

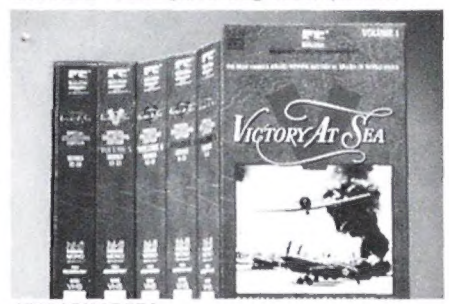
BETWEEN THE WARS
The drama and irony between the 1918 Armistice and World War II. Lucky Lindy, Prohibition, the crash, rise of Hitler, Pearl Harbor. Original newsreels, rare footage—8 volumes.
8919112 Price ~~$169.95~~ Now $19.95



MARCH OF TIME: WAR BREAKS OUT
The classic documentaries covering the war years prior to U.S. involvement, how America fought, the homefront, the peace efforts. 6 volumes.
3911282 Price ~~$149.95~~ Now $19.95



WHY WE FIGHT
Six volumes. The Academy Award-winning series: World War II, from fighting heroes overseas to the war effort at home. Hollywood greats John Ford, Jimmy Stewart, John Huston, others.
1272172 Price ~~$149.95~~ Now $19.95



VICTORY AT SEA
All six volumes of the Emmy-Award-winning series. Highlights the major naval operations and battles of World War II. "A TV classic ...magnificent documentary...outstanding."
1249332 Price ~~$149.95~~ Now $19.95

Witness the dramatic events that changed the world forever.

The CBS Video Club proudly presents Military/History Video: An exciting new way to build your own library of history's most awesome conflicts.

War. The terrible truth is that nothing has shaped the destiny of the world as dramatically as war. And now, Military/History Video brings you the most exciting stories of conflict ever filmed.

From the first major war to be captured on film, World War I, through World War II, Korea and Vietnam, brave cameramen and correspondents have risked their lives to record it all.

You'll see the most complete and authoritative war footage ever assembled, some of it never previously available on videocassette. You'll witness the devastating tools of warfare in action, the bloody battles, the great war leaders who became world leaders, the triumphs and tragedies, the pain and glory.

SAVE UP TO $150. Choose ANY ONE of the collector's sets above and pay only $19.95, plus shipping and handling. Take advantage of this incredibly low price.

As a member, you need buy only four additional single cassettes during the next two years at regular Club prices which currently range from $29.95 to $79.95, plus shipping and handling. Then, you may cancel at any time after buying four cassettes.

How the Club operates: About every month (up to 13 times a year), we'll send you our Military/History Video magazine, reviewing our Featured Selection, plus hundreds of alternates.

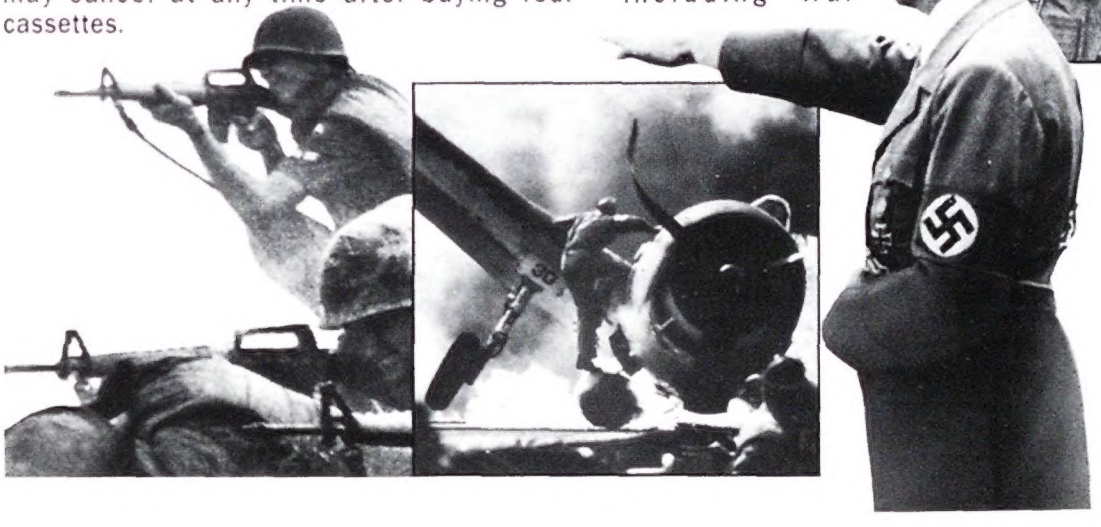
Choose only the cassettes you want: If you want the Featured Selection, do nothing—it will arrive automatically. If you'd prefer an alternate, or none at all, just mail the card always provided by the date specified. You'll always have ten days to decide. (If you ever receive a cassette without having had ten days, send it back at our expense.)

Save with our Bonus Plan: After fulfilling your membership obligation, you'll automatically become eligible for our money-saving Bonus Plan. With each cassette you buy at regular Club prices, the Plan currently allows you to take another cassette of equal value or less for $14.95.

10-day Risk-Free Trial: Join today and we'll send your introductory collector's set, along with more details on how the Club works. If for any reason you're not satisfied, return everything within 10 days for a full refund and no further obligation.

Military/History Video, with its vast selection of first-quality cassettes, is the only source you'll ever need. Own such classics as 'Mein Kampf" and "The Red Baron" and distinguished collector's sets, including "War Chronicles" and "March of Time." This is a unique and expanding resource that you and your family will treasure and refer to again and again.

Join now and begin building your own customized collection of the greatest war stories ever told.



For Fastest Service:
Use your credit card and call to order 24 hours a day.

Call toll-free
1-800-544-4431
Military/History Video,
1400 N. Fruitridge, Terre Haute, IN 47811-1112

Choose any collector's set for $19.95

Military/History Video,
P.O. Box 1112 Dept. HF3, Terre Haute, IN 47811-1112

☐ Yes, please enroll me under the terms outlined in this advertisement. Send me the collector's set for only $19.95 plus $3.00 shipping and handling, a total cost of $22.95. As a member, I need buy only four more single cassettes at regular Club prices within the next two years, after which I may cancel my membership at any time.

Write the number of your selection in this box ▶ _____

Please check method of payment:
☐ My check is enclosed. 1BN
☐ Charge my introductory cassettes and future Club purchases to:
☐ VISA ☐ MasterCard ☐ American Express 1BP

Acct. #: _____ Exp. date: _____
Signature _____
Name (Please print) _____
Address _____ Apt. _____
City _____
State _____ Zip _____
Phone ( ) _____

Note: All applications are subject to review and Military/History Video reserves the right to reject any application. APO, FPO, Alaska, Hawaii, Puerto Rico: write for special offer. Canadian residents will be serviced from Toronto. VHS only. **Applicable sales tax added to all orders.**

© 1990, CBS Records, Inc.

IF THERE WAS SOMETHING YOU DID ONLY

THE AVERAGE AMERICAN BUYS WINDOWS

And who wants to blow a less-than-once-in-a-lifetime opportunity? One way to make absolutely sure you don't is by installing Pella® windows.

They are, quite arguably, the best windows in the world. And it's not just us doing the arguing. With over 1,200 brands to choose from, more architects recommend Pella than any other window.

You also can't argue with the fact that we spend more money researching, developing and endurance-testing windows than any other company. Because we think a thing of beauty really should be a joy forever.

Now, a lot of people will tell you Pella windows are expensive. But if you visit a Pella Window Store℠, you'll discover they're a lot more affordable than you think.

BUILT TO IMPOSSIBLY HIGH STANDARDS. OUR OWN.™

ONCE IN A LIFETIME, YOU'D DO IT RIGHT.

LESS THAN ONCE.

Besides, when you consider it's your home we're talking about, the real question is not whether you can afford Pella. It's whether you can afford anything less.

For a free copy of our Windowscaping® Idea Book, and the address of The Pella Window Store® nearest you, please call 1-800-524-3700.

The Pella Window Store®

C011FO

Secretary Adams' comments

Smithsonian horizons

Planning has taken on increasingly complex calculations that give new meanings to the idea of design

"Design" is one of those portmanteau words that give English a characteristically wide range of allusive possibilities. Its core implies little more than a motivated person with a plan or objective, whether for good or ill. But it embraces the material or artistic expression of that plan as well as the underlying intent. Acknowledging this, Herbert A. Simon's important work *The Sciences of the Artificial* (MIT Press, 1981) cogently views the designed reshaping of existing situations into preferred ones as the objective distinguishing the professions—engineering, medicine, law, business and architecture—from the sciences, which seek not so much to alter as to explain the world as it is.

In unheralded but interesting ways, design is becoming even less of a unitary conceptual category than ever. Some of its usages have diverged to confront new circumstances as they have grown in scale and complexity, almost to the point of unrecognizability. A city or a national transportation grid, for example, is likely to contain uneasily coexisting elements of many designs. No matter how well executed in their own terms, larger designs must increasingly deal with all-enveloping contingencies and are difficult to keep within manageable boundaries.

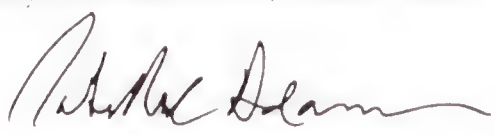
Truly large-scale designs seldom meet any but functional requirements: How well do they serve their intended purposes? At the opposite end of the continuum, falling within a single human glance, an esthetic requirement is added and may even dominate. This is most familiar in traditional manifestations of design, in sought-for features or styles of such widely admired articles of consumption as certain classic cars, Eames chairs, Gucci bags. Perhaps because too many of those who employ our designers remain less sensitive to the growing amplitude of consumer preferences than to older economies of scale, U.S. industrial performance continues to be less than fully competitive in this respect. On the other hand, we still do pretty well with relatively small products when esthetic criteria are overwhelmed by the products' inherent complexity—as in computers.

Meanwhile, functional requirements of design typically reflect competing interests and activities, so that otherwise-dominant esthetic criteria may not be invoked at all. Successful design, almost by definition, needs to be broad and painstaking enough to cover even very unlikely eventualities. New consumer-option and cost-conscious modes of flexible manufacture and component delivery (many borrowed from the Japanese) are integrated with increasing reliance on those telemarketing surveys that interrupt our evenings with increasing frequency. Other provisions are needed to strengthen brand-name identification and loyalty by attention to quality control measures, servicing performance and, of course, advertising.

Strategies of capital investment must fall near the top of the list of business applications of design-as-planning—in R&D, in improved information processing, in advanced materials and robotics, in energy efficiency. Like most of the others, these involve difficult trade-offs—of cost to incremental economic benefit, for example, or of long-term promise to short-term vulnerability to leveraged buyout. Then there are issues of quality and retention of the labor force, and its adaptability to new technologies, all projecting conditions within the firm against less accurately understood trends of the larger society. Sometimes almost superseding "bottom-line" accounting criteria may be considerations of employee health, child-care benefits, training programs, and other issues linked to job tenure and equity.

This is not the place (nor am I qualified—save that the Smithsonian has provided some fairly rigorous on-the-job training) to offer a primer on design as a framework for management. Any airline passenger, perusing the pages of a good business magazine while awaiting dinner, will encounter considerations like those I have mentioned. But it is evident that planning has taken on new, more specialized forms, the increasingly complex and interdependent systems of calculations giving wider meaning to the notion of design itself.

The Smithsonian's principal stake in all this is embodied in the Cooper-Hewitt Museum—the National Museum of Design—housed in the old New York mansion of Andrew Carnegie on upper Fifth Avenue. Esthetic criteria tend to dominate in its eclectic and somewhat improbable but important collection of prints and drawings, wall coverings, textiles and other decorative arts. But while its own holdings concentrate heavily on consumer products, its exhibitions have consistently and brilliantly evoked the whole world of style, intentionality and planning. If you are not already familiar with it, check it out.



Barbara Jordan. Cardmember since 1965.

Membership
Has Its Privileges.[SM]

Don't leave home without it.[SM]

Call 1-800-THE CARD to apply.

© 1989 American Express Travel Related Services Company, Inc

Letters to the Editor

20th-anniversary issue

Dear Sir: Solving our planet's massive environmental problems will require a blend of creativity, confrontation and cooperation. Your timely April issue focuses clearly on the many colors of the environmental rainbow, showing a variety of visions, and solutions to complex, interconnected global dangers.
Stephen L. Fisher
Wausau, Wisconsin

Dear Sir: This issue is the most boring periodical that I have ever had the misfortune to read. I am aware that our environment is very important, and that how we affect the air, water and other natural resources now will be the key to the survival of our planet. But do I have to be preached to about it for more than 200 pages?
William J. Farrell
New Palestine, Indiana

Dear Sir: Thank you for a thought-provoking and, in a world often given to pessimism, encouraging issue on the environment. In particular, my hat is off to Hank Fischer and the Defenders of Wildlife, as well as to the Nature Conservancy. May their message be heard by more of us.

I think that our "liberal" causes often lack credibility with the majority, who sense we are not willing to put our own personal resources on the line for what we believe. Hence it is refreshing and encouraging to read of those who *are* willing to use their resources to achieve what they believe in.
Thomas E. Lindholtz
Sacramento, California

Dear Sir: Congratulations on the April issue of SMITHSONIAN. It is probably the most boring and least interesting issue of that magazine ever published.
Edward J. Ross
Granite Springs, New York

Dear Sir: I am only 16 years old and am deeply worried about my own future and that of my peers on this Earth. Your issue was the best that a magazine has printed on this subject. Without it many people couldn't have grasped the overwhelming problems of Earth. Thank you for helping us realize how important our planet really is.
Jennifer S. Gordon
Portland, Oregon

Earth Day plus 20

Dear Sir: As a native Pittsburgher, I appreciated the photographic contrast of our city's atmosphere on pages 50 and 51. But Pittsburgh's fight against air pollution started more than 20 years before the first Earth Day.

A picture taken 30 years earlier than your "before" photograph showed a downtown street at noon, with streetlights and auto headlights in use. I remember that condition.

But a negative frequently accompanies a positive. Much of the improvement has been gained at an economic cost: loss of most of the steel industry.
Clifford H. Bixler
Gibsonia, Pennsylvania

Dear Sir: There is no doubt in any thoughtful mind that the root cause of global environmental deterioration is human population growth, with its attendant symptoms of resource overexploitation, waste and overtaxed carrying capacity.

In the long run, none of the symptoms of environmental deterioration are likely to be alleviated if we cannot control human overpopulation.
Ross C. Clark
Lisle, Illinois

Where do we go from here?

Dear Sir: Commenting on the Lovins' house, the average person doesn't have $200,000-$300,000 to invest in an efficient home. What we need is not $20 light bulbs but reasonably priced energy-saving devices.

I built my own solar pool heater—930 feet of pipe—and therefore do not need a gas heater. On inquiring as to the cost of a solar hot-air heater, I found it to be $350 per unit, and I needed two units. So, I designed and built my own, 4 feet by 12 feet, for $200.

Such energy-saving devices are within range of the average person.
Fred D. Thompson
Warren, Ohio

Dear Sir: Hank Fischer's efforts to reintroduce the gray wolf to Yellowstone brought to mind an article you published some years ago about ranchers who were using guard dogs to protect their livestock from wolves and other predators [SMITHSONIAN, April 1982].

These Maremmas, Shar Planinetz, Komondors, Border collies and other breeds, raised with their future charges, became very protective as the dogs grew up and went to work. Their guardianship cut killing to a minimum.

A far more natural approach than using poison or guns to control wolves.
Jan Close
San Carlos, California

World Center for Birds of Prey

Dear Sir: The Cleveland Museum of Natural History, located in the heart of the city, also has a raptor release program. I cannot describe the joy of observing a red-tailed hawk hovering on the afternoon thermals, high above rush-hour traffic. Or the wonder of seeing that he had found a mate approximately a year later—though being swooped by him was rather disconcerting. Then there was the thrill of observing both parents pushing their loudly protesting offspring off a tree on its first day of adult flight. Wonderful.
Terry Morgan
Cleveland Heights, Ohio

Connecticut River

Dear Sir: Richard Conniff touched on several of the many aspects that make us love and respect the river and hope for its future.

The first photograph is not only beautiful, it is very personal to me. That old-fashioned rowboat on her outhaul in North Cove has been a family pet for 28 years. I bought her for her shape, in what was best described as "fireplace-case" condition, and with professional help restored her. Educated guesses put her age *then* at about 50 years.

This wholesome, simple boat has

"ROCK THE BOAT."

Dan Daly
Chemist
Texaco Research Center

"At Texaco, we're free to rock the boat. To go with an unconventional idea when only a few can see the potential. One of those ideas resulted in a major development in gasoline technology."

Dan Daly is a research chemist at the Texaco Research Center in Beacon, N.Y. He's a member of the special team that developed Texaco's System^3 gasoline.

The challenge: To clean up deposits in the intake systems of today's high-tech engines.

"We could have used a pre-existing additive package. That would have kept us at par with the current technology in the industry. But we chose to go beyond that. To be innovative, even if it did mean taking a risk."

The result: A remarkable system of gasolines that keep new cars running like new and can help restore performance to older cars. In fact, in the BMW test run on each of the six leading national gasolines, only System^3 removed deposits on dirty intake valves.

This new generation of fuels has met with strong consumer acceptance.

"It's exhilarating to know you've developed something that can improve car performance."

Right, Dan. Because your team made waves, we made a better product for our customers.

Star of the American Road

TEXACO–WE'VE GOT THE ENERGY.

given us more pleasure and use than any other we have had. Fishing, crabbing, tender to bigger boats, and just plain rowing, "she goes easy."
John W. Anderson
Old Saybrook, Connecticut

TreePeople

Dear Sir: Moving into a brand-new "cow pasture" home several years ago, my husband and I lovingly planted our bare lot with a dozen trees.

Last Thanksgiving Day, a teenager and friend racing to grandmother's house for dinner lost control of their car on our snow-slick road and ran into our house. On the way they damaged a telephone pole, sheared off our two-year-old Bradford pear tree and totaled my father's brand-new Cadillac. My first reaction? "They killed our tree!"

The boys were, thankfully, uninjured, the Cadillac has been replaced and we have a new redbud sapling, but I will never get over the fact that my first concern was for our tree.
Cynthia C. Miller
Mechanicsburg, Pennsylvania

Dear Sir: Trees in parking lots should be compulsory. Aside from the agony of stepping into an oven on a summer day, the heat of an unshaded car puts an extra load on the air conditioner.
Eleanor N. Lewis
Baltimore, Maryland

Rails-to-trails

Dear Sir: I, a recycled biker, logged 3,359 miles in 1989, most of them on Wisconsin's 466 miles of bike paths.

The active and scenic Bearskin Trail heads out of Minocqua for 18 miles. There, last summer, I was chatting with a personable young ranger, Kristopher Hill. Suddenly he cried, "Look up there! A hawk chasing a pheasant!" A truly memorable ride.
Richard S. Nickeson
Madison, Wisconsin

Dear Sir: Let us hope that SMITHSONIAN's readers embrace the rails-to-trails concept. However—a cautionary note. No one in the photograph on page 139 is wearing a helmet, nor do the children appear to be secured in the trailer. An accident or even an unexpected quick stop could seriously injure them and/or their parents. Safety first!
Alex Meyerhoff
Los Angeles, California

Dear Sir: It is heartening to see that the trains that once existed will not be forgotten, leaving a memorable legacy of trails into the future. I am both a biker and an equestrian. I can find a number of bike trails and roads on which to pedal, but, alas, there is no place for my horse to canter freely.

Recognizing the need for horseback-riding trails, a local group has been trying to use an abandoned branch of the Pennsylvania Railroad. Converting this spur rail to a trail would connect Green Lane Park and Valley Forge, serving bikers, riders and hikers.
June J. McInerney
Collegeville, Pennsylvania

Alternative agriculture

Dear Sir: This article convinces me that in 60 years we're coming full circle. The new farming methods reported on by

BRITTANY HAIFA LAHAINA WATERFORD BALI NICE SYDNEY TANGIER JUNEAU LENINGRAD NAWILIWILI LISBON VANCOUVER LIVORNO
ENICE VILLEFRANCHE HALIFAX
CORFU STOCKHOLM AUCKL
TRAVEL HOLIDAY MAGAZINE
CRUISE LINE
PLAYA DEL CARMEN NAPLES MANILA KETCHIKAN LAS PALMAS OCHO RIOS MELBOURNE PUERTO VALLARTA SHANGHAI CARTAGENA
Bahamian Registry

Jeanne McDermott are the way my father farmed in the 1930s. It must have been a good way—he was very successful. And no government subsidies either!
Toby Elster
Wichita, Kansas

Dear Sir: It is disconcerting that McDermott suggests that chemicals are solely out there to benefit the agrichemical industry, and that farmers are spending more than $14 billion for something they don't need. Thirty to 40 years ago, before the use of chemicals, farmers were fighting weeds all summer long with hoes and a lot of hard labor, and our soils could not provide the nutrients needed for higher yields.

I was there with that hoe the first time around. Maybe that is why I appreciate the benefits of these herbicides, insecticides and fertilizers.
Janet R. Whitley
Midland, Michigan

Garbage disposal

Dear Sir: To blame consumers for the tons of trash is hardly fair—consumers buy what they need, packaging notwithstanding. The trend toward putting small items in plastic bubbles inside boxes inside more boxes verges on the obscene—hardware is especially prone to this. We come home from a trip to the grocery store laden with bags that contain mostly packages that get tossed out as we fill our shelves.

Then there is the junk mail nobody wants, nobody reads, that fills trash barrels. The post office should price it out of existence before we are buried in it.
Margaret Biggs
Center Sandwich, New Hampshire

Dear Sir: Many people say it is too much effort to separate and recycle trash. Bunk. While it might take a few seconds a day, it can add several dollars a month to your bank account. During World War II, recycling was a driving force behind the war effort, and most people were more than happy to cooperate. Everything was recycled, from old cars to kitchen grease. It worked then; it can work now.
Trina Holman
Pulaski, Tennessee

Earth First!

Dear Sir: Thank you for this informative piece. Although I believe the destruction of any species to be a needless tragedy and value wilderness for its own intrinsic worth, my personal views are more tolerant of our own species than are theirs.

The members of this group drink beer from bottles made in factories, brewed from hops grown on cultivated land. They wear belts made from the hides of animals that "destroy our public lands." They publish books, presumably on paper made from felled trees, and they keep wild animals as pets.

Earth First!ers accept human interference in nature by their actions, then insist on "paying rent" to live on this planet through "monkeywrenching." Their concept of paying rent seems to be to deny others benefits of society that they themselves gladly accept.

I'm afraid I must place my trust in the more conventional faith of environmental management.
James Stephens
Hattiesburg, Mississippi

KONOS KUALA LUMPUR NEW YORK OSLO PIRAEUS LONDON PAPEETE BORDEAUX SYRACUSE WHITTIER HAMBURG BANGKOK QUEBEC

WILL THIS BE THE YEAR?

Or put another way: Could anything you might do *instead* possibly compare with two weeks, a day, even an afternoon aboard this, the cruise line that readers' polls and travel critics have again and again named the world's finest? Could it compare to the thrill of a five-star-plus ship steaming into Sydney, all flags flying? Or to coq au vin in the harbor at Istanbul, savored in an unhurried single-seating dining room? That's what we thought.

Any second now, you should be dialing your travel agent or (800) 426-0821 for more information. As always, we look forward to seeing you aboard ship.

ROYAL VIKING LINE
THE WORLD'S FINEST

1 YOUR CABIN'S BASKET OF FRESH FRUIT
2 YOUR FLUFFY ROYAL VIKING ROBE
3 A BOTTLE OF OUR 1978 CHATEAU MARGAUX.
4 TWO GLASSES OF SAME
5 A SELECTION OF OUR FRESHLY-BAKED BREADS.
6 FRESH FLOWERS IN YOUR STATEROOM, OF COURSE
7 MOZART (FOR THE SOUL) OR, IF YOU PREFER, MILES.

ST. THOMAS VICTORIA WELLINGTON GIBRALTAR ST. MAARTEN CONSTANTA MACAPA

NAZAIRE CALDERA SOUTHAMPTON MAUI PICTON FORT-DE-FRANCE SANTAREM CAPRI SAN BLAS ISLANDS BOMBAY SINGAPORE ROME

© Royal Viking Line 1990

1989 CARTWHEELS

NEVER BEFORE – has pure gold been added to perhaps the most beautiful of all United States silver coins – **The Walking Liberty** half dollar.

Our bi-tone process by which 24k gold is applied to coins with **extreme precision,** creates a magnificent two tone of precious metals. These high **quality** silver and gold coins are fashioned by and are available only through Cartwheels.

Our exclusive coin cover, Lenscote II, permanently seals and protects these authentic coins. The necklace, complete with a 14k gold filled 24" chain is $139. If possible, we would like to send a date meaningful to you between the years 1936 and 1947.

The money clip at $79. is generously covered with pure 24k gold. A numbered Certificate of Authenticity comes with each piece and all are gift wrapped. We guarantee a full refund, if on receipt, you are not completely delighted. Price is subject to change.

OVERNIGHT DELIVERY AVAILABLE

CARTWHEELS
6160 N. Cicero Ave.
Chicago, IL 60646

Order TOLL FREE
24 HOURS–7 DAYS
1-800-441-7666

Send _____Necklace(s) Date(s)_____ Money Clip(s)_____

Check Enclosed $_____ Charge AX, MC, VISA $_____

Add $3.00 for UPS shipping and insurance ($5.00 Air–$14.00 overnight)
(Illinois residents add 8% sales tax)

Card No _____

Exp.Date_____Telephone No. (_____) _____

Name _____

Address _____

City/State/Zip _____

Dear Sir: I agree with the tenor of this issue that our Earth is very precious, so this article has really made me *mad*! As a third-generation Oregonian who, might I add, makes a living from the timber business, I am really ticked off.

The damage to equipment has been in the hundreds of thousands of dollars, as has the cost of time down. Driving spikes into trees was made to look like a playful prank. Do you have any idea what happens to a saw blade that hits a steel or granite spike? It flies into small pieces. It's a miracle no poor Earth-raping logger has been killed.

I have seen the spotted owl's nests in some strange places—as well as in second-growth timber. And note the timber industry's efforts to plant trees.

L. Ruth Staten
Medford, Oregon

Dear Sir: Your anniversary issue was outstanding, especially the Earth First! article. Congratulations to Michael Parfit for presenting an evenhanded view of one of the most important groups in the environmental movement.

Chris Genovali
Moraga, California

Dear Sir: Monkeywrenching is just attempted murder. I hope that a prosecuting attorney somewhere can make that charge stick against Dave Foreman and his group.

Paul Drake
Spokane, Washington

Dear Sir: The full light of exposure you have given these people's terrorist tactics can only be beneficial.

David H. Grafft
Sacramento, California

Dear Sir: Earth First!ers might claim the monkey wrench as their logo, but monkey wrenches are at least useful.

Richard P. Landis
Issaquah, Washington

Phenomena

Dear Sir: Several years ago, dismayed by the intrusion of night-light pollution into my once-dark yard, I campaigned for dimmer streetlamps. Recently I moved away from the city, and, yes, the Milky Way of my childhood is still there; quasars and pulsars and Jupiter's moons are there, along with Orion and Leo, inspiring in me the most serene human sensations—awe and wonder. I'm on the atavistic journey to seek my place in all of this, and part of it is in the night. We humans, all of us, have a right to night!

Diane E. Robbins
Graham, Washington

Dear Sir: I became interested in astronomy two years ago and was suddenly made aware of just how annoying lights can be. I'm lucky enough to live in a rural area on the edge of a very small town. The light pollution is minimal, but many's the time I've wished for a fair-sized peashooter to do away with annoying porch lights.

No man-made light can rival the celestial for beauty. If more people realized this, amateur and professional stargazers would be greatly obliged.

Cheryl Lyon
Eaton, Colorado

Dear Sir: Last year my sister and her husband bought a home on 26 acres—13 in forest—near Port Townsend, Washington, where I went for Thanksgiving week. Bundled against the cold, we spent several nights looking at a sky that I hadn't seen since childhood in Miami. I had forgotten how many stars are in the sky and what the Milky Way really looks like. We took a walk through a forest that was unlike anything I could imagine. The ground was deep with decomposing leaves, and mushrooms were rampant. I came back to my suburban Los Angeles home feeling rested, rejuvenated and at peace with the world.

Gloria Bram
Woodland Hills, California

Picture credits

Cover Art Wolfe; 18 Chip Clark; 26 William Curtsinger/Photo Researchers; 30-41 Kay Chernush; 44-53 Art Wolfe; 56 National Gallery of Art; 57 Hans Namuth; 58-68 National Gallery of Art; 71-80 Yoav Levy/Phototake; 88 Alfred Eisenstaedt, *Life* Magazine © Time Warner Inc.; 89 Library of Congress; 90 Brown Brothers; 91 Mark McCarty; 92 Alfred Eisenstaedt, *Life* Magazine © Time Warner Inc., Granger Collection; 92, 93 Joel Greenberg; 93 Christopher Barnes (top), Granger Collection, Brian Feeney; 94 United States History, Local History and Genealogy Division/The New York Public Library, Astor, Lenox and Tilden Foundations, Sandi Feldman (2); 95 Christopher Barnes; 96 Culver Pictures, Mariana Cook; 97 Emmet Gowin; 100-13 Robert Byrd; 116-18 Robert Llewellyn; 119 Russell Monk, Robert Llewellyn; 120-29 Robert Llewellyn; 133-46 All pictures except page 144 courtesy National Portrait Gallery; 133 Massachusetts Historical Society (2), Huntington Library, John Hay Library, Massachusetts Historical Society; 134 Washingtoniana Division/D.C. Public Library; 136 Mr. Stuart Symington jr., Massachusetts Historical Society; 138 Massachusetts Historical Society, John Hay Library; 141 Division of Photographic History National Museum of American History; 142 Massachusetts Historical Society; 144 New York *Daily News*; 146 Houghton Library/Harvard University; 164 Cooper-Hewitt Museum; 168 Bobbi Tull

Hemingway, Fitzgerald, Faulkner, Steinbeck
The original editions, available again.

A Farewell to Arms, The Great Gatsby, The Grapes of Wrath, The Sound and The Fury, For Whom the Bell Tolls…

These are the great American novels of the 20th century. The foundation of any home library. But their original hardcover editions have been out of circulation for decades, unavailable to all but the rare book trade where their value has long been recognized.

The First Edition Library announces the first printing of the originals in a generation.

The striking design of each volume is unique to its own era: the dust jacket artwork, hardcover bindings, illustrations, dedications; even the minor errors which collectors look for to identify genuine first editions.

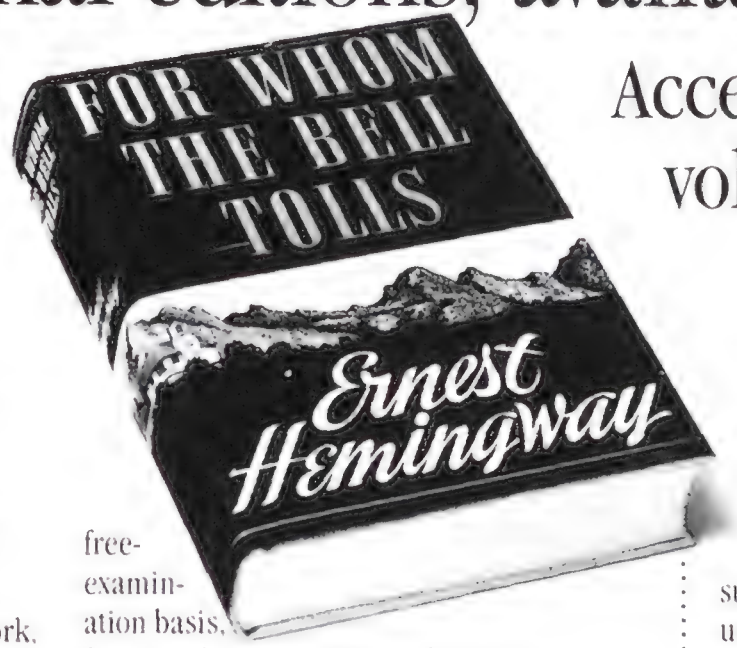
Yet these books have been produced to today's highest physical standards — acid-free paper, full-cloth covers, durable sewn bindings.

Free 10-day examination

Enjoy your introductory volume, For Whom the Bell Tolls, at home for 10 days, free.

You may return it and be under no further obligation or add it to your library for only $2.75 plus shipping and handling.

Then, about every six weeks, you'll receive another classic volume on the same 10-day, free-examination basis, for the subscription price of $29.95 plus $2.95 shipping, handling and applicable sales tax. There's never an obligation to buy and you may cancel any time.



These editions are available exclusively from The First Edition Library. Secure your copy of For Whom the Bell Tolls by mailing the coupon or calling today.

CALL TOLL FREE 1-800/345-8112

"A triumph of book production."
Charles Scribner III

"In 100 years, these books will be the only survivors."
Roger E. Stoddard, Curator of Rare Books
The Houghton Library, Harvard University

© CRI 1990

Accept your first volume at the 1940 price, $2.75

☐ Yes, send For Whom the Bell Tolls for 10-day examination and enter my subscription to The First Edition Library under the terms described in the ad.

I understand there's never an obligation to buy and I may cancel at any time.

Signature _____

Name _____ (please print)

Address _____ Apt _____

City _____ State _____ Zip _____

( ) _____ GP 12
Daytime phone no. (We'll call only if there's a question about your order.)

Offer limited to new subscribers; one per address. All orders subject to approval. Outside U.S., prices slightly higher.

THE FIRST EDITION LIBRARY, Box 654, Holmes, PA 19043

If Only Business Mtgs. Were This Short.

3M

Around the Mall and beyond

Sprawling in the hidden recesses of the Museum of Natural History, the Department of Anthropology isn't easy to find. But ever since I watched Douglas Owsley open a 120-year-old iron coffin in his lab (*Around the Mall*, June 1988), I've been able to make my way back. His enthusiasm for old bones has infected me. I've trailed him like a bloodhound through the museum and to some of his digs—not for ghoulish excitement, but for a unique chance to touch the past.

"See these marks at the joint?" says Owsley, caressing a dry, brown bone. "This lady had arthritis." And I am oddly moved by that unremarkable revelation about an unknown woman who died far away, more than a century ago.

When Doug called me a year ago to invite me to a dig at what he hoped was a Civil War burial site, I couldn't say no. The site was a wooded ridge just south of the Rappahannock River and north of Culpeper. In 1862 and '63, skirmishers in blue and butternut sniped at one another across the river, batteries dueled at long range, and cavalry, crossing at the fords, clashed in yelling, saber-swinging charges. One such cavalry action turned into the big, bloody Battle of Brandy Station.

A small, tree-shaded country church, St. James Episcopal, stood on the ridge, not far from the killing ground. It didn't survive the war, but its graveyard did, lying undisturbed for 120 years. When developers began to eye with conjecture the surrounding pastoral acreage, the church took another look at the old resting place.

Doug Owsley learned of the development plans through his network of interested friends. He realized that casualties from the Civil War very likely lay at peace among the old St. James parishioners. Church officials asked him to help them find out and gave him permission to dig.

I enjoyed the drive through the lush Virginia countryside and found the site with little trouble. The hazy heat of the Old South blanketed me as I parked on the edge of a dirt road. A bulky sheriff in Confederate gray ambled over and eyed me as though I were a perpetrator.

"You gonna dig?" he asked.

"You bet," I said.

He turned away, shaking his head at yet another human idiocy, and I threaded my way through the underbrush toward the sound of voices.

Doug suddenly appeared—a trim and youthful man with spots of mud on his spectacles—and led me into the shade of the trees. Among the hickories and oaks, Doug's crew, uniformed in jeans and sweat-damp shirts, cleared brush to find headstones and footstones, spaded away turf, shaved off the reddish soil with flat trowels, tipped dirt into plastic buckets and lugged them to frames of wire mesh for sifting.

Larger particles were spilled on a rough camp table to be handled, peered at, usually discarded. Sometimes a piece was slipped into a plastic sandwich bag, and a voice would rise above the steady murmur: "Hey! How about this?" Work nearby would stop as people craned for

Physical anthropologist Doug Owsley prepares to dig at Civil War burial site.

Stay Tuned For An Hour Of The Atoms Family.

IBM Research

Atoms appearing right before your eyes. Electrons jumping in quantum leaps and bounds. Quarks, gluons and leptons redefining the infinitesimal.

Those are just some of the wonders you'll see on the next episode of Smithsonian World, when we take you to the frontier of physics. There scientists are exploring a question as ancient as philosophy, as universal as curiosity, as fundamental as language. What is the universe made of?

The answers are both fascinating and paradoxical.

So watch "The Quantum Universe," proudly brought to you by Southwestern Bell. It'll be broadcast on PBS June 6 at 8 p.m. Check your local listings.

You'll see why the atoms are known for their strange behavior.

SMITHSONIAN WORLD

Southwestern Bell Corporation

A co-production of WETA, Washington, D.C., and the Smithsonian Institution. Funding provided by Southwestern Bell Corporation

a look at a bead, a button, a potsherd.

"They're all volunteers," Doug said. "Some are experts—archaeologists, forensic specialists, my own colleagues from the Smithsonian. Others are grad students, history buffs, local folks. Most are my regular crowd that join me again and again. But some here are members of the church. After all, the burial ground belongs to them."

At a clearing, diggers were uncovering old bricks. "Foundations," said Owsley. "The church was built in the 1840s and was used as a field hospital during the Brandy Station fight. Later the Yankees simply took it apart to build winter huts.

"In 1868," Doug went on, "the church was rebuilt a few miles away as Christ Episcopal. Its members haven't lost interest in the old site, and I've done my best to explain the importance of this archaeological investigation and how the findings can help establish a link between generations."

Douglas Owsley can be very convincing. No one could be gentler as he explains to a puzzled stranger that taking a look at Great-grandfather's body is important to science. No one could be more inspiring when he calls one of his regular crew in the middle of *Murphy Brown* to say he has authority to open a family plot where burials go back two centuries. "You can make it by 8 if you start at 5. Oh, and bring sandwiches."

He was born and raised in Wyoming. He got addicted to this kind of hands-on history thanks to a professor at the University of Wyoming who took him on some digs. He's worked on all kinds of burials, but the Civil War, thoroughly documented by both sides, fascinates him as it does many of us. "Here you can sometimes get a positive identification," he told me. "And that prospect keeps you on edge."

But it's slow work. At Culpeper, the crew would start by probing one of the distinct depressions in the ground that usually indicate a grave. They'd listen for the faint thud of hardpan, and feel for slight differences in the texture and resistance of the soil. After shaving away considerable quantities of soil, they'd often find a layer of smooth dirt with a darkened patch, eerily taking the shape of a human skeleton. Someone aptly called it a "ghost."

As is so often the case when I join a field trip, nothing happened on the day I was there. But I drove home smitten with the excitement of the search.

A few weeks later, I was off again. A new housing development was encroaching upon the family burial ground of an old Virginia plantation. Family descendants and the Manassas Museum had asked Owsley to help them relocate the cemetery to the protected land near the main house.

I talked to one of the family, a woman who dubiously watched, with me, the excavation of her ancestors and tried to remember them. "I know the names because I mapped them all out," she said. "But I have no feeling for the old place. I live in Richmond, my brother's in Colorado, the family's all split and gone." She was silent for a moment. Then: "I guess I'm glad they're helping science. But, personally, I'm getting partial to cremation."

Having always been partial to cremation, I've been tending the other way. It's appealing to think that in 200 years I could offer something of value. Returning home that afternoon I suggested to my wife that I was considering being buried.

"All that expense!" she exclaimed.

INVITE THE OUTSIDE IN.

Every room has a view. And with Marvin windows, you can take full advantage of it. Because our windows are all made to order, which gives you a virtually unlimited choice of shapes, styles and sizes. Everything from bows, bays and picture windows to geometric shapes, even curved glass and Corner Windows.™ Our colorful Idea Book shows you all the exciting ways Marvin windows can add beauty and light to your home. For your free copy, return the coupon below or call toll-free **1-800-346-5128** (In MN, 1-800-552-1167; In Canada, 1-800-263-6161).

SMT-0002-6

Send to: Marvin Windows, Warroad, MN 56763

Name_____

Address_____

City_____ State_____ Zip_____

Phone ( ) _____

I plan to. ____ Build ____ Remodel ____ Replace

MARVIN WINDOWS ARE MADE TO ORDER.

FABERGÉ MAGIC

A Collector Egg in Crystal, Enamel and Accents of Gold.

THE VIOLET BOUQUET. In the opulent tradition of the Imperial Eggs created for the royalty of Russia and the crowned heads of Europe. Today, this highly coveted tradition is reborn in a new Fabergé collector egg. Promising beauty and elegance with every fragile blossom. *Enameled by hand* in translucent shades of shimmering violet on golden blossoms. Enhanced with lustrous faux pearls. Encased in a Fabergé egg of mouth-blown, *full-lead European crystal*, frosted with a delicate garland of leaves. And elegantly set on a sculptured crystal base, hand-accented with rich bands of *24 karat gold*.

The Violet Bouquet, a precious work of art created for you by the distinguished House of Fabergé. Imported. $145.

HOUSE OF
FABERGÉ

Please mail by June 30, 1990.

The Franklin Mint · Franklin Center, Pennsylvania 19091

Please enter my commission for The Violet Bouquet, to be handcrafted for me in full-lead European crystal, with fine hand-enameling. The crystal lavishly accented with bands of 24 karat gold.

I need send no payment now. I will be billed for a deposit of $29.* when it is ready to be sent to me, and for the balance in four equal monthly installments of $29.* each, after shipment.

**Plus my state sales tax and a total of $3. for shipping and handling*

SIGNATURE

(ALL COMMISSIONS ARE SUBJECT TO ACCEPTANCE)

MR/MRS/MISS

(PLEASE PRINT CLEARLY)

ADDRESS

CITY/STATE/ZIP

12892 - 9

THE FABERGÉ VIOLET BOUQUET

©1990 F.M.

Special Offer to New Customers!

The "Early American" Historic Collectors Coin Set

Own five great American coin classics, up to 130 years old, for only $29 in this special introductory offer. Each historic collectors set includes an average circulated 1859-1909 "Indian Head" penny (the favorite of the Wild West era); a long-obsolete 1865-1889 nickel 3 cent piece (featuring one of America's prettiest Liberty designs); an 1883-1912 "V" 5 cent nickel (crooks gold-plated some and passed them off as $5 gold pieces); and an 1892-1916 "Liberty Head" silver dime and half dollar (regarded as the most perfect coin design in U.S. history). **Real money** from bygone America, these historic sets are being offered to new customers only at this amazing low price. First come, first served while supplies last. **FREE display wallet** included with each set for safe keeping. Prices are as follows: 1 set, $29; 3 sets, $85; 10 sets, $275. Limit 10 sets. **Order #15779 To order by major credit card, call toll-free 1-800-451-4463** at any time. Or send your check or money order to: International Coins & Currency, Inc., 11 E. State St., Box 218, Dept. 1490, Montpelier, VT 05601. As our way of saying thank you, your order will be shipped postpaid. **100% No-Risk Guarantee:** 30-day return privilege.

Some weeks later I visited Doug Owsley's office to tie up the loose ends of the digs I'd seen. At Culpeper, he told me, the crew finally excavated a soldier. "He and several others lay a little apart from the regular church graves. He'd been buried quickly, without a coffin, but with two planks, taken from church pews, placed on either side of him. Then someone laid a greatcoat over him before filling in the grave."

"What do you know about him?" I asked.

"We found evidence to place him in the Washington Artillery of New Orleans. They fought alongside some South Carolina outfits in August of 1862." I recalled reading about the Washington Artillery: "kid-glove soldiers" from the best New Orleans families. Even lowly privates were apt to bring along their "body servants" when they enlisted.

"What was he, a blue-blooded college boy?" I asked.

"No, surprisingly, he was much older than most," said Doug, looking at a form sheet on his desk. "Probably around 32. And he'd worked hard; he had heel spurs—spikelike bony projections at the back of the heel that result from pulling stresses of the Achilles tendon. And it appears that he was probably an Irish immigrant."

"Why Irish?"

"Because records of the Washington Artillery tell us that only two of the men in that unit who were killed at Brandy Station were in their 30s, and both of them were Irish. Both also had worked as laborers.

"We found a clay pipe in his pocket," he added. "It still had a dottle in it. A botanist probably could tell you how good the tobacco was—and maybe where it was grown."

Without history, Doug's forensics would have limited meaning. Civil War records supply facts about the units engaged, their casualties, the dates of the action. In this case it was August 23, 1862, when Lee maneuvered to keep the Federal forces under John Pope on the northern side of the Rappahannock, and to find a place where they could cross it themselves. In a few days the Rebel plan succeeded, and Lee and Jackson pinned down Pope and pummeled him. We call the battle Second Bull Run or Second Manassas.

Owsley admits that Virginia digs are difficult because the soil is so damp and acidic. New Mexico, where he investigated military remains near Santa Fe, offers ideal conditions. Here, in 1862, a Confederate force sweeping up the Rio Grande from Texas was trapped and beaten by Federals. As the Rebs entered Apache Canyon (they called it La Glorieta Pass), they met devastating fire from Colorado militiamen who had the high ground and knew how to shoot.

"Many wounds were in the upper part of the skull," said Owsley. He led me into his lab and rummaged for some x rays. "Look at this bullet hole. Look at the fragments of lead that became embedded in the bone when the bullet splintered. And here's where one bullet hit an arm, passed through and down and smashed the hipbone when it exited. The man must have been crouching for cover when the Federal sharpshooter fired down on him."

He tapped at a film of a piece of jawbone: "The third molars are just in. That fits the age of one of the youngest Rebel soldiers: 17 years and 4 months."

"Is that how you tell age?" I asked.

"It's one of the ways. We check the third molars and the formation of the crowns and roots of the teeth. And we check for wear. We also look for plaque and cavities, just like your dentist, but that gives us information about dental pathology, not about age."

"What about sex?" I inquired. "The overall size of the skeleton, of course. Men are generally bigger," he explained. "And then there's the . . . here, come and have a look." He produced a bulky hipbone. "See this notch? That's for the sciatic nerve. In a male it forms a smaller angle than in a female. Now look at this skull. See the pronounced line along the side? That's where muscles are anchored. And here, at the back, a distinct bump for the neck muscles. This is a classic male skull. Now look at this one, smooth and even all around. Female."

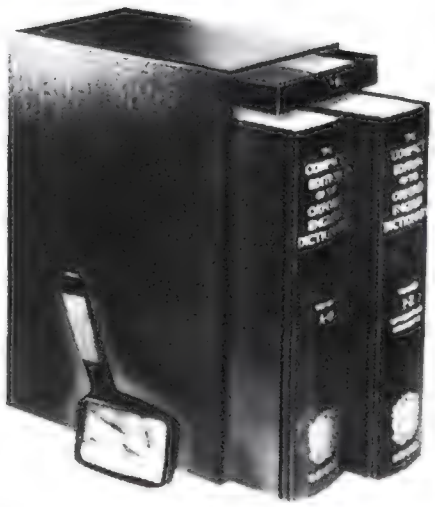
As I drove home, I found myself thinking that I had come almost too close to our most tragic war. It's one thing to get excited by the accounts of Bruce Catton and Shelby Foote, to read Lee's letters and thumb through *Battles and Leaders of the Civil War*. It's another to feel you know a 32-year-old Irishman in a high-society unit who put his pipe in his pocket while he was helping serve his cannon. And a 17-year-old who entered a Southwestern canyon and never knew what hit him.

Edwards Park

PERMANENT PLEASURES

Choose one of these fine works and save up to $290.

You simply agree to buy 4 books within the next 2 years.



The Compact Edition of The Oxford English Dictionary

for **$32.95** (Pub. price $250)

"The most complete, most scholarly dictionary of the English language"—*The Christian Science Monitor.* Through photoreduction, the original 13-volume set has been reproduced in this two-volume *Compact Edition.* A Bausch & Lomb magnifying glass is included.

Joseph Campbell's Historical Atlas of World Mythology

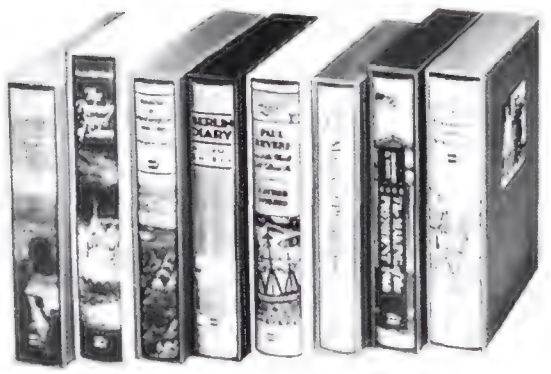
for **$29.95** (Pub. prices total $250)

This masterwork—the culmination of Campbell's brilliant career—traces the saga of humankind's spiritual awakening. In five lavishly illustrated volumes, Campbell shows how our ancestors lived and what they believed, shedding new light on who we are and where we come from. Insightful, illuminating, challenging, the *Historical Atlas of World Mythology* is a vibrant introduction to the past—and to the mind of one of this century's greatest thinkers. 99 4-color maps; 1,152 photographs and drawings.

The Times Atlas of the World Seventh Comprehensive Edition

for **$29.95** (Pub. price $149.95)

"The best atlas available in English"—*The New York Times.* The only atlas printed in 8 colors for clear reading of geographic and political features. This volume contains 292 pages of color maps and a 277-page index with over 200,000 entries.

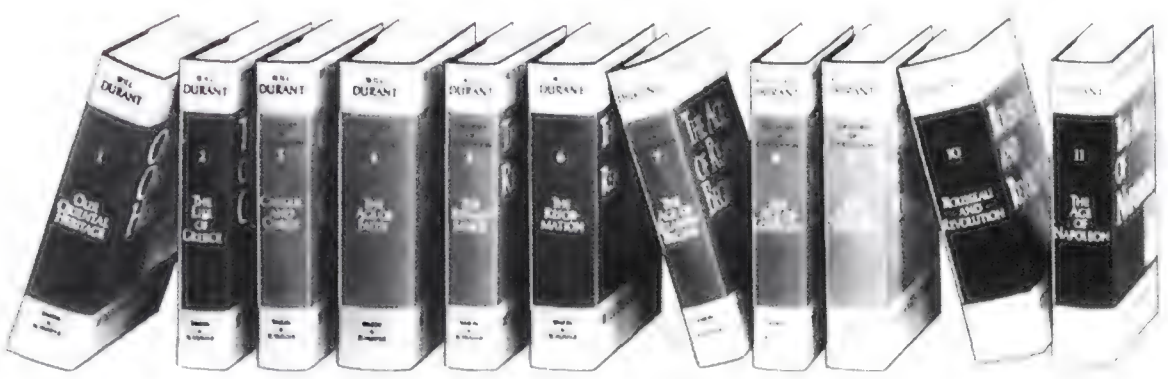


BOMC Library of American History

for **$24.95** (Club prices total $280)

Taking you from the American Revolution and the Constitutional Convention to the Civil War, World War II and the 1960 presidential campaign, this handsome collection makes a superb addition to your home library.

Set includes *Berlin Diary, The Making of the President 1960, Miracle at Philadelphia, Paul Revere and the World He Lived In, The Peabody Sisters of Salem, Reveille in Washington 1860–1865, A Stillness at Appomattox* and *The Year of Decision 1846.*



The Story of Civilization by Will and Ariel Durant

for **$29.95** (Pub. prices total $335.45)

For almost half a century Will and Ariel Durant traced the continuity of world history—the religions and philosophies, the political and economic tides, the arts and sciences, the customs and conquests—to show the foundations of society today. A Book-of-the-Month Club exclusive for almost 50 years, the Durants' illustrated masterwork is history come alive.

© 1990 BOMC

Facts About Membership. As a member you will receive the *Book-of-the-Month Club News*® 15 times a year (about every 3½ weeks). Every issue reviews a Selection and more than 150 other books, which are carefully chosen by our editors. If you want the Selection, do nothing. It will be shipped to you automatically. If you want one or more other books—or no book at all—indicate your decision on the Reply Form and return it by the specified date. *Return Privilege:* If the *News* is delayed and you receive the Selection without having had 10 days to notify us, you may return it for credit. *Cancellations:* Membership may be discontinued, either by you or by the Club, at any time after you have bought 4 additional books. Join today. With savings and choices like these, Book-of-the-Month Club is where book lovers belong.

BOOK-OF-THE-MONTH CLUB®

Book-of-the-Month Club, Inc., P.O. Box 8803, Camp Hill, PA 17011-8803 **A454-6-0**

Check one box only.

- ☐ 913. The Story of Civ. $29.95
- ☐ 905. Compact OED $32.95
- ☐ 946. Times Atlas of the World $29.95
- ☐ 934. Hist. Atlas of Mythology $29.95
- ☐ 915. BOMC Libr. of Amer. History $24.95

Please enroll me as a member of Book-of-the-Month Club and send me the item I have checked at left, billing me for the appropriate amount, plus shipping and handling charges. I agree to buy four more books during the next two years. A shipping and handling charge is added to each shipment.

Name_____ **0-64**
(Please print plainly)

Address_____ Apt._____

City_____

State_____ Zip_____

Prices shown are U.S. prices. Outside the U.S. prices are generally higher. All orders subject to approval.

RADIO...
THE WAY IT WAS
MEANT TO BE.

Brought to you on National Public Radio by the Chrysler Corporation Fund.

Distinguished artists. Great performances. Enlightening critiques by top reviewers. Every Monday through Friday, "Performance Today" showcases the most exciting new directions in classical music. Enjoy the best of America's performing arts and classical musicians on "Performance Today".

CHRYSLER FUND

Phenomena, comment and notes

The halt to the killing of dolphins in tuna fishing may signal a new era in how we treat other sentient beings

On June 10 still another interest group will parade down Pennsylvania Avenue here in Washington, carrying their placards from White House to Capitol for a rally at which their leaders, sympathetic politicians and celebrities will preach to the converted. This one is the March for the Animals, the kickoff of what its organizers hope will be the Decade of Decency in our treatment of our fellow beings. Television networks may cover it. Newspapers may give it a few column inches. Much of Washington, both official and just plain folks, will shrug it off and get on with the business at hand.

Yet good things do happen, often in what physicists would call a nonlinear response. Interest groups apply what pressure they can, writing letters, organizing boycotts, marching in Washington—and nothing seems to change. The real world stays just as it was. Business as usual goes on. Then one day everything turns upside down.

That happened in April, when the nation's three largest suppliers of canned tuna announced they would no longer buy fish whose capture had caused the death of dolphins. StarKist, an affiliate of the H. J. Heinz Company, which buys 250,000 tons a year, about a third of U.S. consumption, said it would have tuna labeled "dolphin-safe" on the market by July. Chicken of the Sea, owned by an Indonesian trust, and Bumble Bee, a Thai-owned subsidiary, announced within hours that they would follow suit.

The news affected me more than I expected. Front-page stories in the papers exploded me out of my morning catatonia. DAY OF THE DOLPHIN, trumpeted the headline on a New York tabloid at my subway stop. The world was a nicer place. I've never swum with dolphins; the idea of keeping them in pools so human swimmers can have mystical experiences does not appeal. But I have my own memories, one in particular from childhood. Late one afternoon I stepped out on deck on an Esso tanker steaming from Carteret, New Jersey, to Aruba. Swimming with the ship were dolphins, seemingly hundreds of them, from close aboard nearly to the horizon, leaping with no apparent effort, almost as if the water were moving and they were only bobbing up and down like horses on a carousel. Now, even though I sit hunched over a computer on the seventh floor of an apartment building across the street from the high-rise glass of a bank headquarters, they still leap in that golden light.

With or without the approval of scientists, we tend to think of dolphins as not only intelligent, but even loving. It may be only their instinct to push their own newborns to the surface that causes dolphins to come to the aid of humans struggling in the water, but can we be absolutely, positively sure that's all there is to it? (In our October 1980 issue, writer Michael Parfit tried to separate what we know from what a lot of people would like to believe about dolphins. Researchers have speculated, for example, that dolphins may use sonar to project images into other dolphins' brains. But no one knows.) Some argue that "no hands" means "no technology" and that without technology there can be no cultural evolution, but who are we to say that dolphins feel the lack of car payments and television commercials?

Once I stood in a room at the Osborn Laboratories of Marine Sciences in Brooklyn, New York, learning of cortical complexity from a man who was cutting a dolphin brain into ultrathin sections for an anatomic atlas. It was valuable work, an extension of human knowledge, but I still secretly suspect we are a long way from having a wiring diagram of why dolphins leap for the fun of it.

There was a time when a person could grab a tuna salad sandwich at lunch without worrying about killing dolphins. Tuna were caught with hooks

weeks in Spain's Costa del Sol
from only **$28** a day
including airfare.

4 weeks in Yugoslavia
from only **$53** a day
including airfare.

3 weeks in the Swiss Alps
from only **$74** a day
including airfare.

"I couldn't stay home for less!"

The Secret?

Low-cost "vacation of a lifetime" adventures for people with 3 to 5 weeks to travel abroad. Enjoy your own studio apartment or residence hotel in the world's most desirable resorts. Grand Circle Travel *invented* the extended vacation so active, mature Americans like you could live abroad like natives—with the comfort and convenience of home. All for less than it costs to stay home!

Make your next trip your best yet!

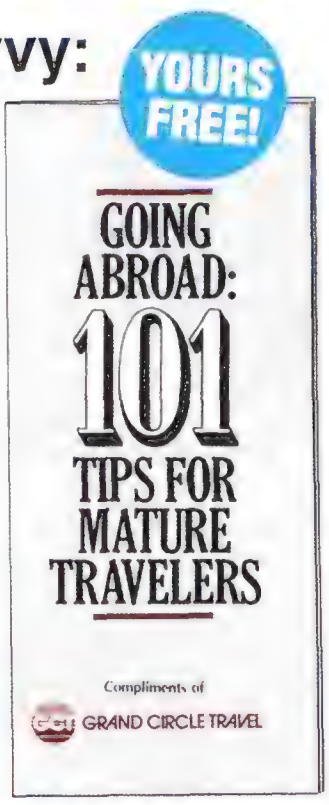
We've put together 101 practical travel tips to save you money and help you make the most of your next vacation abroad. Send for your free copy—along with free information on Grand Circle Travel's bargain travel abroad.

GRAND CIRCLE TRAVEL

32 YEARS OF **LEADERSHIP IN TRAVEL** FOR ACTIVE, MATURE AMERICANS

Free travel savvy:

- **PACK LIKE A PRO**
  16-point Checklist of most-frequently forgotten essentials (page 10)
- **STRETCH EVERY DOLLAR**
  Where to get the best rate of exchange (page 4)
- **TRAVEL LIGHT**
  Reduce your baggage by half and never miss it (page 7)



- **AVOID JET LAG**
  Try the U.S. Department of Energy's anti-jet lag diet (page 11)
- **SHOP SMART**
  How to avoid buying a "bargain" that's cheaper back in the States (page 17)
- **TIP WITH CONFIDENCE**
  When to tip, how much to tip, how to avoid overtipping (page 19)
- **STAY SAFE IF YOU'RE SOLO**
  How to avoid getting lost when you can't speak the language (page 16)
- MUCH MORE!

Tip #102
Travel with a smile on your face, an eagerness to meet new people, a zest for adventure—and a copy of our free guide, "**101 Tips For Mature Travelers**" in your pocket.

Send for it today!

GRAND CIRCLE TRAVEL
1600 Grand Circle Building
347 Congress Street
Boston, MA 02210

☐ **YES I'm 50 or over. Please rush me my free copy of "101 Tips for Mature Travelers." I understand there is no cost and no obligation.**

MY NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

My age is:
A ☐ Under 50
B ☐ 50–59
C ☐ 60–69
D ☐ 70–79
L ☐ 80+

I last traveled outside the U.S.:
E ☐ Less than 3 years ago
F ☐ More than 3 years ago
G ☐ Never traveled abroad

Cruise travel:
Y ☐ I've taken a cruise in the past 3 years.

I'm also interested in information on vacations to:
☐ Spain GB ☐ Portugal GD ☐ Yugoslavia GG
☐ Switzerland GH ☐ Russia & Eastern Europe AH
☐ Mexico VF ☐ Alaska Cruise Tours ET
☐ Cruises EA ☐ Other _____

IZ-Z-722

and stout poles. When a boat found a school, powerful men lined the rail, yanking the fish out of the water and back over their heads onto the deck. Only in the 1960s came the switch to purse seines, mile-long nets that are wrapped around a school and then closed at the bottom, trapping the fish. The whole net is then winched on board the boat.

The problem in the eastern tropical Pacific, where much of the tuna for the U.S. market is caught, is that for reasons we don't understand, several species of dolphins habitually swim with schools of certain species of tuna, especially the yellowfin. These fish run larger, are easier to process and thus bring a premium price from canners. Purse seines catch the dolphins along with the tuna, and the dolphins drown in the nets. By the early 1970s half a million dolphins were dying each year, and a generation raised on the television series *Flipper* raised an outcry.

In 1972 the Marine Mammal Protection Act was passed, requiring U.S. fishermen to use techniques that would reduce—although not eliminate—the number of dolphin deaths. (Marine mammalogist Ken Norris outlined the situation in an article in the February 1977 SMITHSONIAN.) Even with new nets and new maneuvers, however, up to 20,000 dolphins were dying each year in U.S. nets and perhaps 80,000 more in the nets of the unregulated foreign-flag fleet. Fourteen years ago the Humane Society of the United States began the first boycott. Other conservation groups joined in; the campaign recently reached a crescendo of full-page ads in national newspapers. A turning point came in 1988 when Earth Island Institute biologist Samuel LaBudde shipped out as a cook on a Panamanian tuna boat and filmed 200 dolphins drowning in nets. The battle may actually have been won in the lunchrooms of American public schools. When students went to their school boards demanding that tuna be taken off the menus, companies noticed.

Dolphins are among the most attractive animals, downright charismatic in their effect on humans. But there is a wider, deeper current running in the American consciousness, and suddenly, it seems, campaigns that have dragged on for years are coming to climactic resolutions. Furriers are admitting they have a problem. (On the day I called for information on the June march, the office staff at People for the Ethical Treatment of Animals—PETA—were changing into formal wear and chilling champagne to celebrate a Washington furrier's going out of business.) Cosmetic companies are scrambling to announce they are moving away from animal testing. The biomedical establishment is being forced to take seriously the protests of activists.

One of the closest observers of these trends is the philosopher Peter Singer, whose 1975 book *Animal Liberation* helped give intellectual framework to the deep emotions of others. Singer, a professor of philosophy and director of the Centre for Human Bioethics at Monash University, Melbourne, Australia, is not one whit sentimental about animals. Neither he nor his wife, he wrote in the preface, "had ever been inordinately fond of dogs, cats, or horses in the way that many people are. We didn't 'love' animals. We simply wanted them treated as the independent sentient beings that they are. . . ." In the updated second edition, published in March by the *New York Review of Books*, Singer is impatient with those who think the war is over: "As soon as I began hearing people saying things like 'Of course, things have improved a lot since that was written . . . .' I knew that it was necessary to document what is happening now in laboratories and farms and to present readers with descriptions that cannot be palmed off as belonging to some distant dark age."

Singer devotes one chapter to feedlots and slaughter houses, to veal calves locked in stanchions and chickens kept in cages too small for them to turn around in. Another considers animal experiments, painful ones that have no real application to human well-being, some of which have been repeated for 40 years. He does not demand we stop all experimentation at once: "All we need to say is that experiments serving no direct and urgent purpose should stop immediately, and in the remaining fields of research, we should, whenever possible, seek to replace experiments that involve animals with alternative methods that do not." His central argument is not that animals should be considered our equals, but that they are entitled to equal consideration of their interests. His criterion is that of Jeremy Bentham, two centuries ago: "The question is not, Can they *reason*? nor Can they *talk*? but, Can they *suffer*?"

The war probably will still be going on when this magazine celebrates its 100th anniversary, even its 200th. But the climate seems to be changing irrevocably. Philosophers such as Singer cut through our emotions to discover what our attitudes toward animals ought to be with the same dispassion as the anatomist sectioning a dolphin's brain. As the issues become clear, more and more people will enlist to the degree and for the duration they choose. No longer will the matter be left to small bands of fanatics. In the jargon of journalists, "MTK": "More to come."

John P. Wiley jr.

Leaping dolphins such as these have captured the human imagination for millennia. Now we are extending that empathy to other creatures.

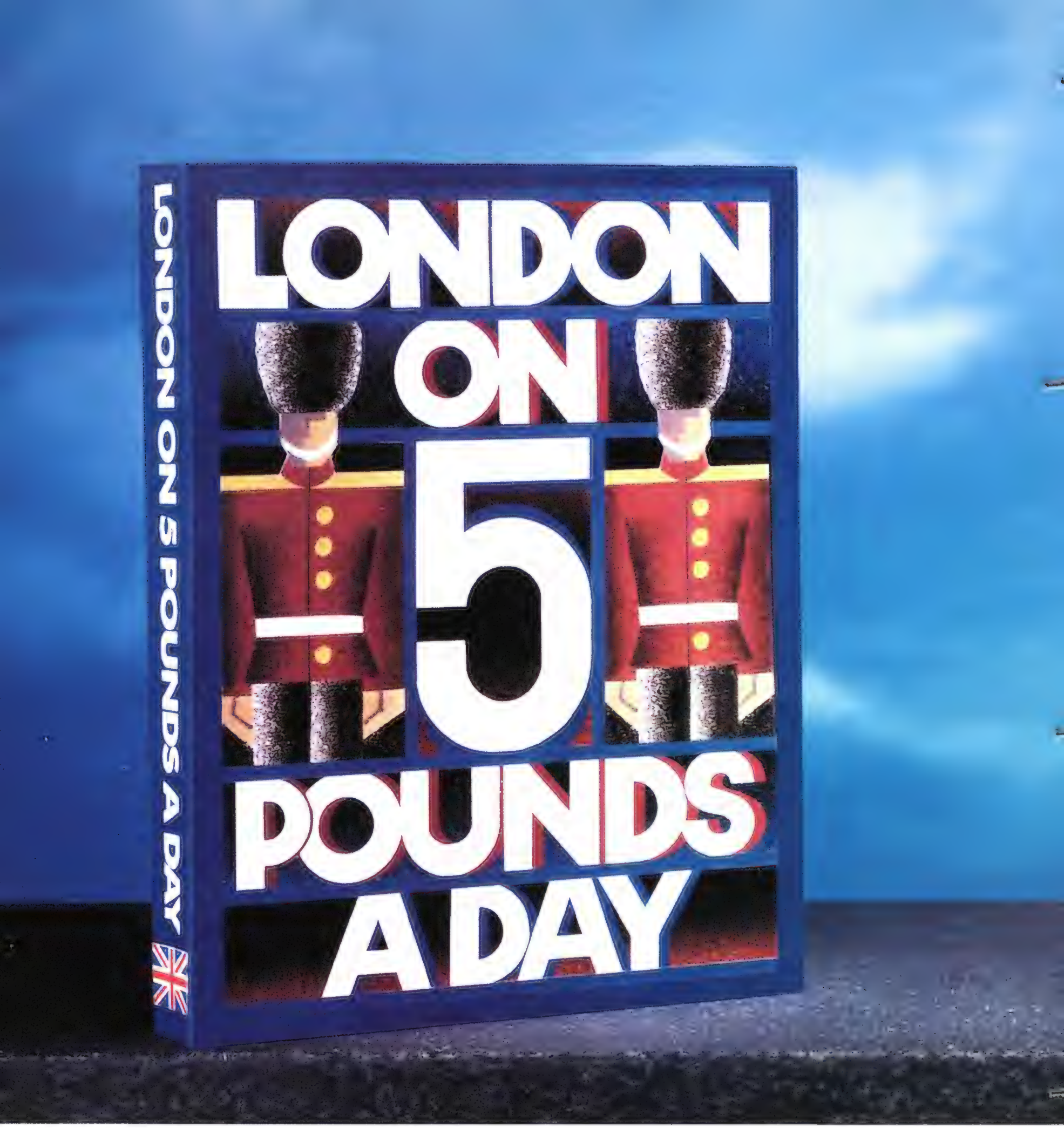
DO YOU REALLY NEED TO KNOW ANYTHING MORE?
THE 1991 ALFA ROMEO SPIDER.

1-800-245-ALFA

ALFA ROMEO

The legendary marque of high performance.

© 1990 Alfa Romeo Distributors of North America.



Despite the optimism of the guidebook, it's tough to get around London with just 5 pounds in your pocket. But thanks to Sony, it's easy to take in London with less than 2 pounds in your hands.

Handycam®

In fact, the Sony Handycam® CCD-TR5, the world's smallest and lightest camcorder, weighs a scant 1 lb. 12 ounces.* But as convenient as it is to pack, it's also conveniently packed with features.

Wherever you go with your TR5, you have the luxury of 2 hours of recording time and 4 hours of playback instantly on any TV.† What's even more remarkable is the way you can catch all the action. And how simply.

There's auto focus, auto iris and auto white balance. So you can effortlessly capture subjects or even the Queen herself. Plus a 6:1 power zoom lens to preserve a panorama of Buckingham Palace, or the

© Copyright 1990 Sony Corporation of America. All rights reserved. Sony, Handycam, Flying Erase and Edit Search are trademarks of Sony

London for under 2 pounds a day.

smile of your 6 year old in front of it.

We've also seen to it that you can shoot inside the Tower of London with amazing 4 lux low light sensitivity. Stop the flight of a cricket ball with a 6-speed shutter that responds up to 1/4000 of a second. Or title and date your videos with Digital Superimposing. And the Sony Handycam TR5 even has Edit Search™ for on-site editing and a Flying Erase™ head for glitch-free scene transitions.

It all adds up to a camcorder that does everything the big ones do. Pound for pound.

SONY

*Without tape or battery. †NTSC American Standard

The huge hull of a tanker hit by a missile in the Persian Gulf dwarfs workers who are approaching it.

By Mary Anne Weaver

Great ships go to the boneyard on a lonely beach in Pakistan

Various chains and cables are primarily used to haul the ship closer to shore as breakup work proceeds.

Much of the world's scrap steel comes from breaking up old ships. At Gadani, swarms of Pathan tribesmen still do it the hard way

Fifty men, fine-boned and thin as teenage boys, stand on the beach, expectation on their faces. Some huddle together silently; others only stare out to sea, where the Greek passenger vessel *Teera* is bucking and rolling toward them, its vast 13,665-ton bulk pushed toward the land by one remaining engine, a tricky tide and crashing waves.

Then a hiss, as the end of a rocket-fired steel cable speeds overhead, flying from the bridge of the *Teera* to land on the beach beside a dilapidated Bedford truck engine powering a winch.

A hush. Then, with a yelp the men break ranks, scattering in all directions, some toward the sea and the *Teera*. Others grab the cable. A few, far out in tiny fishing boats below the *Teera*'s prow, jump onto the ship's anchor, already being slowly lowered, and as agile as acrobats, scurry up its chain and quickly attach a second, shore-linked cable to it.

It looks like tug-of-war

On the beach, five others, including one old man, connect the two cables to a 115-horsepower engine. The winch strains. "*Haria!*"—"Pull!"—shouts a labor boss in Pashto, the language of these Pathan tribesmen. "*Haria! Udi!*"—"Pull! Lift!"

On the beach the temperature rises, reaching 104 degrees. The surf crashes before us. Today is the high tide of the Arabian Sea. Only twice a month does the tide rise this high. Two human chains in assorted headgear and pajama-like clothes heave, shout, and pull the cables and the massive links of chain. It looks like tug-of-war between 50 men and the crashing, capricious sea; the winner's prize: all 13,665 tons of salvageable steel and brass fittings.

The distant *Teera*, once a proud cruise vessel, is now a humbled hulk. Black, bilious smoke clouds seep from her engine, which has broken down again. Muhammad Siddique, now to be her last pilot, stands with binoculars on her formerly elegant bridge; four walkie-talkies hang around his neck. As one of the beaching masters at Gadani, he has been doing this job for 13 years, but the *Teera* will be the most difficult ship he has ever handled. Her draught is enormous—24 feet forward, 30 feet aft, and both of her engines keep breaking down. Along with a 25-man crew, Siddique must guide the crippled vessel to the spot where the tidal current is strongest, and where he will get the maximum push from the onshore wind. He must run the ship aground as close as possible to the water's edge so that the work teams can take over and pull her onto the shore.

He is guided only by brief bursts of walkie-talkie commands and two beaching flags, bright red and blue against the brown outline of Gadani Beach. As the tide

Photographs by Kay Chernush

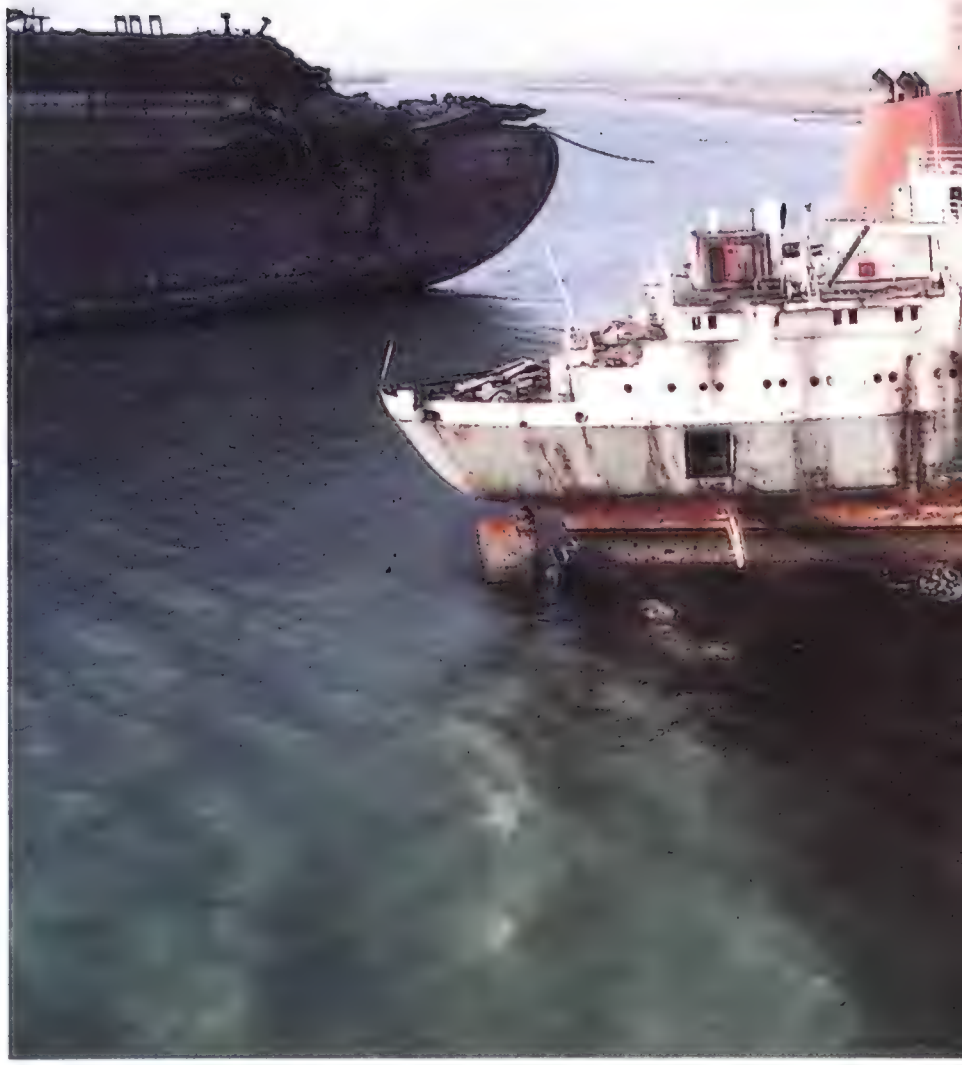
approaches nine feet—the highest of the day—Captain Siddique lines up the *Teera* in her slot, absolutely perpendicular to the beach and right between two other vessels, a Russian passenger liner and an Egyptian oil-drilling ship. Gadani shipbreakers are no respecters of nationality. (Of the myriad ships that have been beached over the past two decades, only a few originally flew the flag of Pakistan.)

There is high expectation in the swarm of men assembled near the marker flags. The doomed ship means money in their pockets—and furious, hard work. Around them the beach is littered with three-inch steel cable. The old Bedford engine moans. "Stay away from the cable!" a company director yells at me. "Stay away from the winch. It's just too dangerous. Anything can snap." Then he smiles sheepishly; I can tell he thinks it is total idiocy for any correspondent, let alone a woman, to be here at all. He may be right. Gadani Beach, already the cemetery of some 6,000 ships, is a forbidding and chaotic place.

The *Teera* strains under her one remaining engine. After firing the cable to shore, Siddique has ordered full speed ahead. By now the *Teera* should be traveling at 20 knots, but has barely reached 8 when she hits bottom, still a thousand feet from land.

For a few moments, there is only the sound of the surf. Then, with a cry, the barefoot work teams dash into the shallow sea. Now the two steel cables—one lashed to the *Teera*'s swinging anchor, the other affixed to her bridge—and the winch's chugging truck engine come into play. Each time a large wave passes, lifting the ship briefly from the bottom, a young man, barely a teenager, guns the engine, straining the cable to pull the ship shoreward.

In unison, as in a finely choreographed ballet, 50 men brace the cable, which is slung over their left shoulders and under their right arms, and pull, heav-



Doomed cargo ship with white superstructure has already been winched ashore with help from the tide.

Each yard has a winch to help haul in hulls and parts. Here, an old truck engine is pressed into service.

Workers stack sorted structural parts on a truck; its next stop will be a steel rerolling plant in Karachi.

It will take work teams about two months to salvage fittings and cut up what remains for resale as steel.

ing and shouting to one another, bringing the *Teera* closer to shore. The cable pulls taut against their narrow, bony backs. They have little equipment heavier than the 115-horsepower engine attached to the straining winch. The young operator guns the old Bedford. The cables sway. The men heave and pull, laugh and leap—two agitated, human chains. For 2 hours 8 minutes, as the tide rises and the engine groans, almost inch by inch the *Teera* is hauled in.

The luxurious flagship of the Greek Chandris Line, *Teera* plied the waters of the Aegean when I sailed aboard her in 1969. Now her once smartly painted hull is faded, her lifeboats rusted in place. Like the countless ships dismembered here for scrap since 1972, she grew too old and expensive to maintain in a world given over to air travel, and in the face of great technological advances in ship design. Now she is prey to skillful swarms of Pathan tribesmen.

Gadani Beach, where the desert confronts the Arabian Sea, is only an hour from Karachi, Pakistan's former capital. But time rolls backward here. In the past 18 years these Pathans have nibbled away at spent ships, beaching them, stripping them, breaking them, with wrenches, sledgehammers, a few blowtorches and their bare hands.

Once a ship has been beached at Gadani, the Pathan tribesmen slice away at it in much the same way that the Inuit carve up a whale. They use nothing more sophisticated than a handful of cranes and forklifts, and a few obsolete winches and engines, salvaged from long-forgotten ships. Anything that can be sold anywhere in the world is stripped, unbolted and carried away: engines, railings, crankcases, detached bows and sterns. The men who break up the ships can earn as much as $9.50 for a 12-hour day, a decent wage by Pakistani standards.

As many as 150 ships at a time

Over the years the number of ships undergoing demolition at Gadani has varied from 5 to as many as 150 at a time, depending on the season (beaching is difficult during a monsoon), the number of ships on the market, the ability of wreckers to outbid competitors. More important have been the Pakistani government's tax policies, which seem to change with the tides. A ship that has been decommissioned and is ready for scrapping usually goes up for bid in London.

In addition to those in Pakistan, companies in Taiwan, China, South Korea, India, Bangladesh and a few other countries have bid for ships on the international market at so many dollars per ton. While in most businesses the highest bidder gets the prize, this does not necessarily apply in shipwrecking. Because the seller foots the high cost per mile of getting the ship to the

With a light cable, a tribesman secures a load of heavy cable just salvaged from a dismembered tanker.

Medium-sized anchor chain, secured to line and then to cable, is used when the hauling process starts.

shipbreakers, he will often accept a lower bid from a country closer at hand. In recent years the Taiwanese and Koreans have consistently outbid the Pakistanis, but the Gadani wreckers have often acquired ships that were casualties of the nearby war in the Persian Gulf.

Many other shipwrecking nations are fortunate enough to have dry docks and highly mechanized equipment. Pakistan has only its six-mile-long beach and the almost legendary skill of the Pathan tribesmen, who come from the northern mountains to make a living tearing ships apart. I stare at these lithe ship destroyers. Most are wearing the *shalwar kameez*, Pakistan's national dress—blousy trousers and a tunic top. Most are dressed in brown. Waiting for a ship, they cluster on the beach. Their faces dark from the sun, the shipbreakers somehow look like coal miners, covered with tar, dirt and dust.

During good years Pathans swoop down on Gadani like an army of picnic ants. It takes from two to six months to reduce a giant vessel to steel plate and salable fittings. Littering the beach like forgotten seashells are funnels, radio equipment, anchors and compasses, mounds of steel plate. At moments of high activity the place is like a cross between a junkyard and a surrealist picture of industrial hell. From the debris of obsolete oil-drilling rigs, cargo ships and tankers, Gadani has produced as much as a million tons of steel a year, and 10,000 tons of other metals—mainly copper and brass. In 1989 shipowners sold an obsolete vessel for as little as $110 per ton. But a 10,000-ton ship, once scrapped, has brought as much as a $180,000 profit. Most of the profits go to high-tech Karachi; the financial capital of Pakistan, it is a cosmopolitan center with computers and stock markets. While here in Gadani a multimillion-dollar shipbreaking industry is wed to the capriciousness of nature, the power of the moon, and the legions of small men who ferry drinking water to their work crews in buckets balanced on bamboo poles across their shoulders.

Naturally, I had planned my trip to Karachi to coincide with the monthly high tide, and as I wandered through the new international airport, full of electronic equipment and chrome, I puzzled over Gadani, only 40 miles away, but centuries removed in lifestyle.

Mary Anne Weaver, for four years Sunday Times of London *correspondent in South Asia, now is based in New York City as a freelance writer.*

Inside the body of a beached ship, a skilled welder cuts the hull into chunks with an oxyacetylene torch.

Workers have a union and some benefits, including a tea break. Men like this one make about $10 a day.

In a frieze of intense effort, these Pathan workers haul a line, creating slack to help with the process of dragging pieces of beached ship nearer to shore, where workers can bring hands and tools to bear.

The road from Karachi to Gadani passes the fourth-century B.C. route once taken by Alexander the Great, then crosses the provincial border into Balochistan, a flinty and arid place that is a crucial geopolitical site. Nestled under Afghanistan and Iran, with a 470-mile coast on the Arabian Sea, it is near the oil lanes of the Persian Gulf.

The nomadic Baloch tribesmen, who gave the province its name, appear along the roadways like dusty, antique mirages, their long camel trains piled high with bedding and children, escorted by flowing herds of sheep and goats. The Baloch have always disdained the artificial lines of the British mapmakers, who literally quartered their vast tribal holdings in the 19th century. Today they continue to come and go, as they've always done, migrating between their traditional homelands in Pakistan, southern Afghanistan and the eastern fringes of Iran.

Gadani Beach is ten miles inside Balochistan. At first glance, it is hard to take in this vast maritime graveyard. Rusting funnels. Parts of engines and switchboards. Light fixtures and toilets and compasses. And heaps and heaps of steel plate. At the edge of the sea, a slice from the midsection of a tanker stands upended in the sand.

Farther up the beach are more and more rusty mounds: anchors, drive shafts, pressure tanks, life-

Inspection teams clamber aboard a big oil-drilling ship to determine the best way of taking it apart.

Showboating along a taut anchor line, a tribesman takes a timesaving shortcut from the hulk he is working on to the beach that is some yards away. The job makes Gadani workers enormously strong and agile.

boats, even portholes. It is only at the end of Gadani's six-mile stretch of beach that one comes upon unrecognizable items, a supply of steel constantly being sorted and hoisted into the open backs of one of the trucks that ferry scrap inland to rerolling mills. Because their sides and panels are a jumble of folk-art paintings, tinsel and colored, flashing lights, I learn, these trucks are unmistakably from the North-West Frontier Province, bordering Afghanistan, where the Pathans come from.

The men leave their wives behind and, once having reached Gadani, live on the beach. In the midst of their jumble of shanties, the minaret of a makeshift mosque prods the skyline. It is made from salvage, an old ship's mast. *Everything* at Gadani is. Workers' quarters, company offices, all built from driftwood and scraps from the sea. An upturned lifeboat serves as a roof for one enterprising worker's home, but for most of the workers shelter consists of tar-paper shacks, with as many as six men sleeping shoulder-to-shoulder. There are open sewers. It is 40 miles to the nearest doctor. On the day I arrived, green mourning flags flew from four of the ramshackle huts. Nobody would tell me how many workers had died, but I learned that the death fee of 15,000 rupees ($710) promised the families back home is rarely paid by the shipbreaking companies. It is more cost-effective to scare any stray relatives away.

Nearly all unskilled, the workers are recruited from scores of poor and desolate villages along the Afghan frontier by local tribal chieftains—who get a finder's fee. The workers' average age is 25. Their beach bosses often don't know their names. Some stay for a season, others for ten years, returning home to visit every few years and sending their pay back to wives and children. Some die at Gadani, fallen from the ships they work on or crushed by sheets of steel. Day begins at 7 A.M. and ends at 7 P.M. There are no holidays and the work is seven days a week.

Yet the men continue to come. In a big year as many as 25,000 have traveled a thousand miles south from the cold, distant mountains to this sweltering stretch of the Arabian Sea. Like miners and high-steel men in America, the shipbreakers take pride in their ferocious work, having a tough conviction that only they can chop a ship to pieces under the conditions they endure. They are proud that in three or four months 125 men can devour 5,000 tons of steel.

A ship like the *Teera* will take longer, maybe six months, not only because she is so big, but because passenger ships are more complex. A month and a half is needed just to remove berths and cabins, woodwork,

mirrors and swimming pool. Then the largest pieces of her superstructure—some weighing 20 tons—will be slid off on wires from her deck to the beach, almost a hundred feet below. Then the men—at least 175 of them by now, but only 50 with any kind of skill—will clamber aboard, ripping, stripping, draining, chipping, bashing and torching what's left. Nothing is still at Gadani. Everything moves. Already the teams are working like demons. Small forms, silhouetted in the swirling dust, scurry over the piles, tugging and hauling. I see crystal chandeliers and silver being lugged away. A 4,500-ton Japanese oil rig, I am told, even provided a complete helipad.

I watch the welders, usually protected by goggles, cutting ever-smaller pieces of steel. Sparks and blazing metal fly through the air. I watch as the ten-ton plates that made up the hull of a nearby tanker slide off its frame on wires, gliding gracefully through the air from the deck to the shoreline, 120 feet below. They land with a huge thud, even though the sound is heavily muffled by the crashing waves. Instantly six men scramble toward them with oxyacetylene torches to slice the plate into one-ton sections.

Aboard the tanker a small mob of workers in embroidered prayer caps attack the ship with sledgehammers and crowbars. Others assault portholes and railings. Twenty men, with a large sheet of riveted-steel bulkhead on their shoulders, struggle toward a waiting truck. A labor boss shouts "*Sah aghiftal, sah wistal!*" at them, Pashto for "Breathe in, breathe out!"

Shouting gives them strength

Nearby, a 5,000-ton Egyptian bulk carrier is having her whole bottom pulled off. She has been cut into four sections, each attached to a thick line. Now one of the lines is linked to a rusted winch, powered by a 35-horsepower diesel engine. The waves crash in. Eight men link the line over their shoulders and under their arms and, as the 50 brought in the *Teera*, pull the Egyptian ship's rusted bottom up onto the beach. Shouts. Hand wavings. A dizzying din. I ask a labor chief, a mean-looking man wearing a turban of green and white, the colors of Pakistan, why Gadani's workers make so much noise. "When they shout, they exhale," he tells me matter-of-factly, "and that gives them more strength."

Buyers from Karachi, in starched safari suits, abandon their air-conditioned BMWs to stagger down to the beach, inspecting, weighing, judging, sizing anything they find. A mixed bag of pressure gauges, a hundred in all, is rolled up in canvas and carted off for use in a local sugar mill. There is impromptu barter for small items. Some Russian cordial glasses, "Sputnik" engraved on every one, go to a Karachi banker. I bid

Once chunks have been almost cut away by welders, the winch is used to break them loose from hull.

Safely hauled onto the sand, a detached funnel is being dismantled for valuable fittings as well as steel.

In Karachi, a car hood serves as a bizarre sidewalk bazaar for salvaged ship's bells, lights, portholes.

against him for 30 minutes, but at $250 the price is too high for me.

The nerve center of all this commerce is the cluster of shipbreakers' Gadani Beach offices, each fashioned from the captain's quarters of now-forgotten ships. In one that I visited, the chairs and tables, plywood roofing and rickety wooden stairs had all come from different vessels.

I met one shipbreaker, Ameen Gokal, first in his Karachi office in the chaotic "old city," which hugs the port, a far more appropriate transition to Gadani than the city's sophisticated downtown area. Old Karachi teemed around me: tough-looking Pathan elders with turbans and orange-dyed beards; cripples and beggars; street hawkers and sailors—a constant, pervasive din. The few women in evidence were covered from head to toe in *burkas*. Anonymous black forms, they glided silently in and out of storefront shops.

Pakistani shipwreckers have known rich and lean years. Huge sums of money have been made at Gadani. Until 1984, profits on a shipbreaking investment went as high as 300 percent. But that was when Gadani, powered by human muscle and the pull of the moon, had the second-largest shipbreaking industry in the world. In those days only Taiwan outproduced Pakistan. Remembering it, Hassan Jafari, the secretary of the Pakistan Ship Breaker's Association, said to me, "We could have buried Taiwan, if only we had had the government's support."

Sometimes the annual influx of hulls for the wrecking at Gadani has been in the hundreds. Sometimes, as in recent years, it has dwindled to fewer than 30. What is particularly frustrating for the Gadani shipbreakers is that the drastic decline in incoming ships has less to do with the number of ships ready for scrapping on the world shipping markets than with problems peculiar to Pakistan.

Beginning in 1983, under Pakistan's then president, Mohammed Zia ul-Haq, already-high import duties on ships brought in for wrecking were steadily increased at an astonishing rate, making it harder and harder for shipbreakers to show a profit and to cope with foreign competition in the ship-buying market. During the next five years, tariffs kept going up and up not only for the shipwrecking industry but also for the steel rolling business, the primary purchaser of Gadani's scrap steel. The strong speculation was that Zia imposed the prohibitive import duties to protect from price competition one of the government's top priorities at the time, the relatively new Pakistan Steel Mills, a Soviet-funded white elephant that has been slow to show promise.

A month before his death in August 1988, President Zia approved an additional excise duty that nearly killed the already-ailing industry. By this time, shipbreakers were having to pay more in import duties on a ship than they had actually paid for the ship itself. After paying the steep duties, other tariffs and workers' wages, shipbreakers often found themselves unable to sell their scrap steel and other salvaged parts for any sort of profit. Many of Pakistan's 77 shipbreaking companies closed their doors while high-risk speculators propped up the business, hoping government policy would change.

Only in the past year, under Prime Minister Benazir Bhutto, have tariffs been somewhat relaxed. The industry is just beginning to recover. If Pakistan's import duties are reduced enough so that shipbreakers can make a good profit, the current rise in work at Gadani should continue.

Ships still carry about 90 percent of the world's international trade, though some nations, most notably the United States, have all but ceased building ships. Other countries, especially the Soviet Union, have been building freighters and tankers at a fierce rate. The life of a working, oceangoing vessel varies, but ships are constantly wearing out, being wrecked, or losing their competitive edge as carriers to newer and faster vessels. They will remain a steady source of precious scrap steel for years to come.

Meanwhile, on the beach at Gadani there is a sudden din, then yelps and cries. A Sri Lankan cargo vessel is in sight. Another orgy of destruction is about to begin. In only four months, she will be nothing but heaps of scrap on the sand.

All that remains of a ship—the barnacle-encrusted stern and propeller—waits to be turned into scrap.

With 156 horsepower, the 24-valve V6 Lexus ES 250 can hold its own against most other sports sedans. But what makes the ES 250 a truly potent force is the host of power features pictured at right.

The New Lexus ES 250 May Be The Most Powerful Sports Sedan Ever Built.

And because many of these features are standard, the ES 250 is an automobile whose value may be its strongest asset.

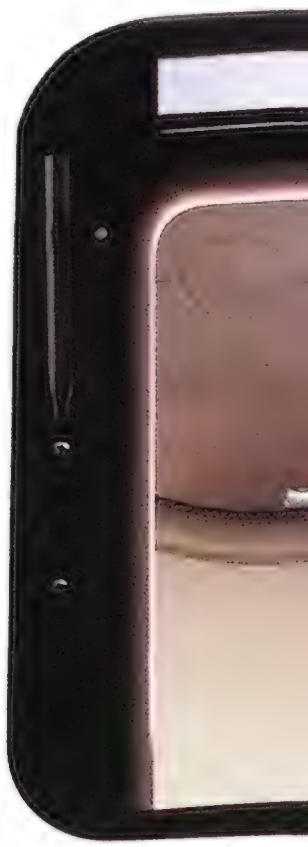
Power. It's what separates the ordinary from the extraordinary.

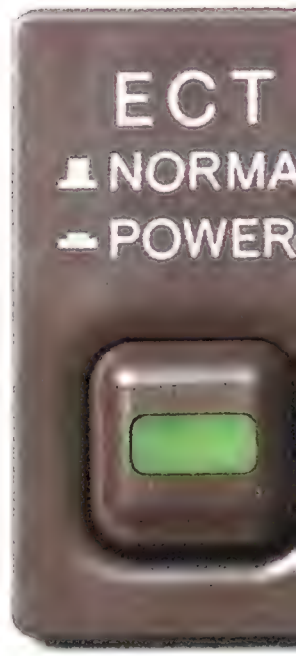
And it's one more thing that makes the Lexus ES 250 not just a sports sedan. But the luxury sedan of sports sedans.

THE ES 250

LEXUS

The Relentless Pursuit Of Perfection.





Want to open up an ES 250 on your favorite stretch of road? An available power sunroof makes it easy.

Power mirrors for both the right- and left-hand sides are standard.

Closing up your ES 250 is easy, too. With standard power windows and power door locks. And a standard theft-deterrent system is designed to keep it closed to intruders.

Our satellite network allows any Lexus dealer to obtain your ES 250's maintenance history in seconds.

Available 4-speed Automatic Transmission lets you select a "power" mode for more spirited driving.

A standard six-speaker audio system and optional CD player punch out sounds both rich and powerful.

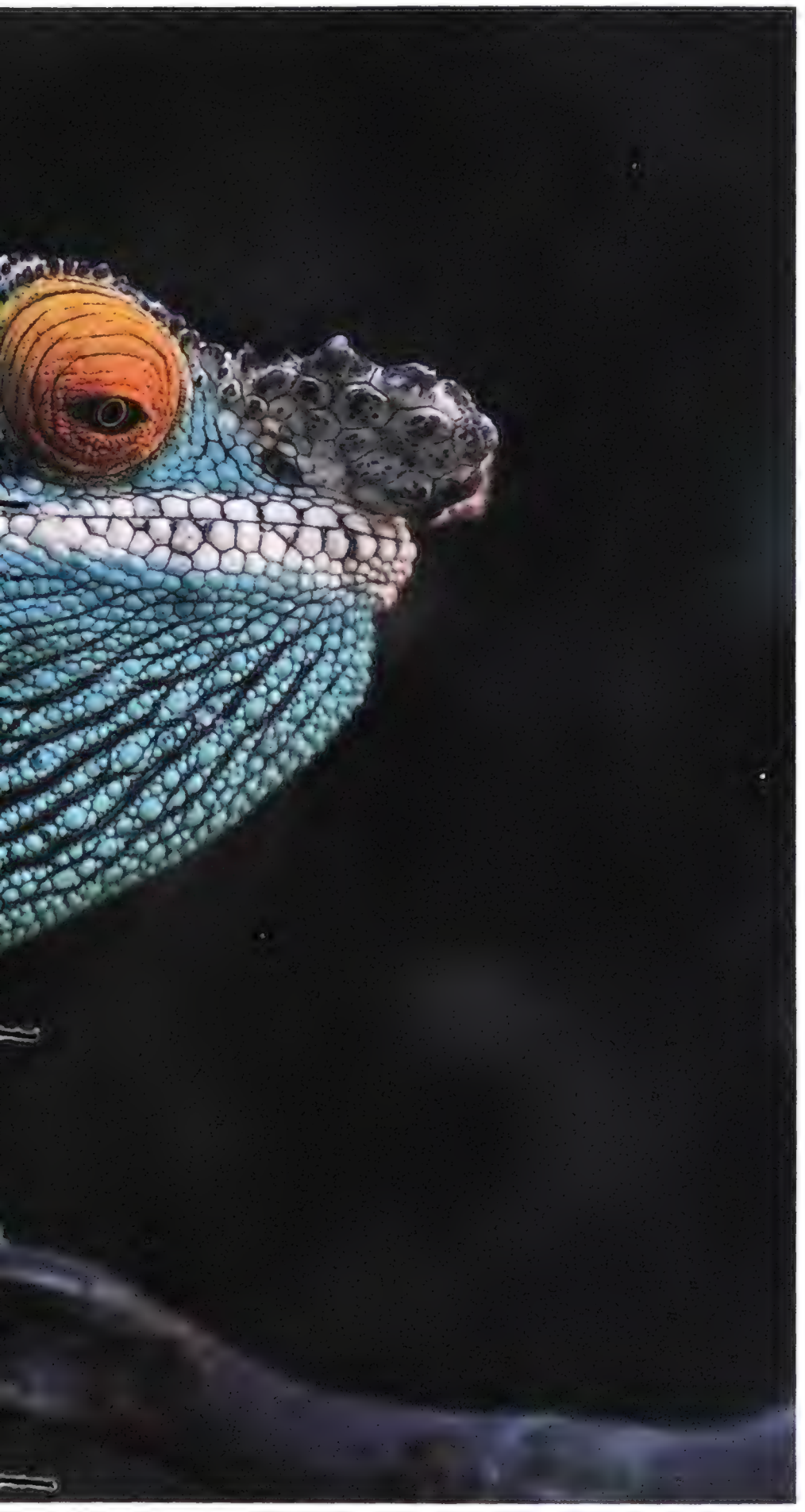
Optional leather, power adjustable driver's seat allows you to find an ideal seating position.

© 1990 Lexus, A Division Of Toyota Motor Sales, U.S.A., Inc. Lexus reminds you to wear seat belts and obey all speed laws. For more information, see your Lexus dealer or call 800-872-5398.

By James Martin

The engaging habits of chameleons suggest mirth more than menace

With their clowns' faces, their rolling eyes and their amazing tongues, these lizards can do a lot more than change their color



My wife handed our neighbor a photograph showing a green, pop-eyed, three-horned, helmeted creature with one handlike claw pointing retriever-style. "He belongs to us and he escaped." The man, standing in his doorway, stared at the picture, struggling to make sense of it. "He's very slow and hard to see. Check the tops of your bushes," my wife implored. The man returned the picture to her, clearly convinced he was dealing with a lunatic. "Don't worry. Chameleons can't hurt you," she said. The man silently turned, shut the door and locked it.

It would be hard to design creatures less dangerous than Old World chameleons. They aren't the slim, green lizards that children buy at carnivals. True chameleons look like antediluvian monsters. Their ability to change color and pattern is the least of their oddities. With eyeballs that rotate independently like the turrets of a B-17, ludicrous threat displays, prehensile tails, asymmetrically bundled toes, slothlike pace, darting tongues, and lolling gait—all wrapped in a baroque assemblage of crests, horns, helmets, flaps and frills—chameleons inspire mirth rather than menace.

While almost all chameleons live in Africa or Madagascar, the common, or Mediterranean, chameleon ranges throughout the Middle East, some Aegean and Mediterranean islands, along the coast of North Africa and into southern Spain. Chameleon subspecies occur in the Arabian peninsula, India and Sri Lanka. Chameleons inhabit the jungles of the Congo Basin, the desiccated wastes of the Namib Desert, and the hedgerows of Nairobi. Some species survive rare snowfalls on Africa's equatorial peaks. Most chameleons belong to the genus *Chamaeleo*, but a fraction of them fall into one other genus—or several, depending on which expert is consulted.

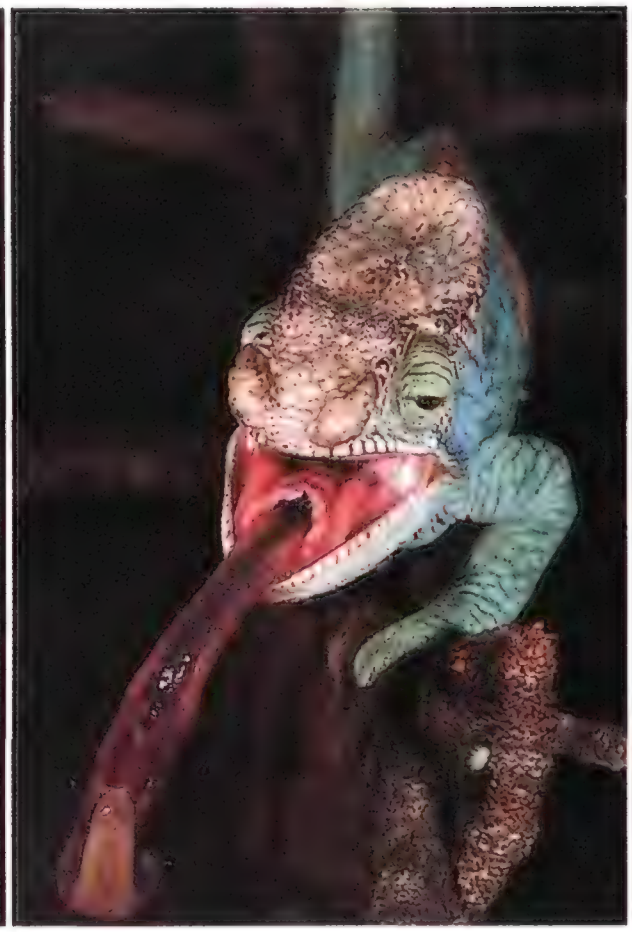
Chameleons are largely arboreal and rarely visit terra firma except to lay eggs or to engage in courtship. Most species spend the bulk of their day colored like bark or leaves, an effect magnified by the lizards' flat, ovoid shape. A chameleon rocks back and forth like a leaf in the breeze as it walks. Often it will wait for the wind to stir the branches before it moves, its prehensile tail stretched straight, for balance. The same tail can wind around a branch for security when the animal feeds or makes a tricky maneuver. When a chameleon feels secure or wants to show off, it curls its tail in a tight spiral. I saw one catch a branch with its tail after free-falling several feet.

With toes bundled together for stability and strength, each foot forms a "V." The front feet have two toes

Male Parson's chameleon, native to Madagascar, is one of world's largest, reaching up to two feet in length.

Photographs by Art Wolfe

At San Diego Zoo, a Parson's chameleon draws its eyes together, calculating the distance of its prey.



Then, with pinpoint accuracy, the tongue thrusts at the victim, here a hapless insect, and reels it in.

bundled on the outside, three on the inside; the rear feet have the opposite arrangement. If disturbed while sleeping, some species reflexively drop to the ground, perhaps eluding capture by a snake or lemur. Juveniles and smaller species often jump when approached, but you shouldn't conjure up a vision of a gymnast going for the gold. A chameleon lands like a bag of groceries.

Chameleons walk on the tips of their claws, feet splayed wide, reptilian pianists playing octaves. The gait that effectively masks their presence on a bush takes on a goofy, conspicuous character on land—like a mime portraying a drunk at half speed—which only serves to draw attention, not conceal. Even when chameleons flee in panic, they may cover less than 20 feet a minute. If exposed or cornered, their best defense is a fierce, aggressive display in which the chameleon puffs itself up with air and makes a hissing sound. It works: one field biologist has observed a chameleon warding off a pack of wild dogs with its bluff.

Our escapee was a male Jackson's chameleon, indigenous to the forests of Kenya and Tanzania. Strutting about with plodding solemnity, three horns sprouting from his armored skull, he resembled a shrunken triceratops. Not all chameleons grow horns. Some possess only a vestigial stump, while others glory in four fully developed horns, whose function seems to be to impress females and intimidate rivals.

A little more than a dozen years ago, my wife and I found our first chameleons, a pair of Jackson's confined to a small glass tank in a California pet store. Their outrageous appearance and erratic movements fascinated us. Even though we had no idea of what the creatures needed, it was clear to us that the pet shop employees knew less—crickets, intended as chameleon fodder, roamed the cage untouched. With prehensile tails and feet designed for gripping, these were obviously arboreal lizards, but the staff provided no branches for them. They sat in the corners, scratching on the glass with one foot, eyes rotating. We visited the shop daily for a week. Day by day their bowl of water evaporated. It turns out that Jackson's—like most chameleons—will drink only by lapping water droplets off a leaf. We could stand it no longer. We paid the bail and sprung them. Later, more chameleons joined us.

Apparently, our Jackson's adhere to the New Hampshire motto, "Live free or die," so we accommodated them by stringing ropes across our ceiling, creating lizard highways. Given the run of the house, the chameleons preferred to commute from wall to wall on the ropes, only veering to the curtains to bask in sunbeams. And they had one trait that any parent would envy: all fell asleep when we switched off the lights.

James Martin, a freelance writer who is based in Seattle, writes on a wide range of subjects, including the natural world and sports medicine.

The tongue, which resembles a closed accordion when retracted, extends with lightning speed as much as one and a half times the lizard's body length. Sticky saliva coats the abrasive surface of its forked tip.

The lizards flourished. We rejoiced. But soon they lost all desire for crickets. Mealworms rekindled their appetite, but boredom soon set in. My wife and I could be found on sunny days crawling around our yard looking for tasty invertebrates as our fussy eaters sunned themselves in the garden. We tried to shoo away bees and wasps, but the Jackson's still hunted them. When one did zap a bee, it would sit with its mouth open, like an incautious diner at a Thai restaurant. The population of spiders and flies dwindled around our house that year.

Our chameleons revealed their authentic personalities outdoors. In the California summer we kept them outside in a chicken-wire cage. When the morning sun first struck them, they curved one side of their bodies toward the light. They flattened their bodies and thrust out their throats to create the maximum surface area; the side facing the sun turned almost black to absorb the rays, while the other side stayed green. If a twig blocked some of the sun, a stripe of green skin would mark the shadow. After a few minutes, warm and fully charged, they returned to their normal color and began hunting insects. They rocked on branches, avoiding detection by moving with determined indecision. A passing bird or plane froze them in position, one eye "turret" tracking the threat.

In the course of keeping chameleons I have learned how vulnerable these grotesquely engaging creatures are. We turned over our house to them, trapped insects to please their palates, found a vet who would treat them with antibiotics and operate on them when necessary—and still they died. Because symptoms of illness are not obvious, chameleons are high-maintenance charges for even the most dedicated.

No amount of loving care could keep our Jackson's alive for longer than two years. Some died in a month or two from stress. Without abundant sun they develop rickets. Confinement kills them. They need wide temperature variations daily to survive. Dietary variety is a must. Compared with Senegals—the most commonly imported chameleons today—Jackson's are somewhat hardier. But they are still fragile indeed.

Today, there is an even more alarming reason to resist chameleon ownership: the Convention on International Trade in Endangered Species (CITES) officially lists all chameleons under "threatened status." The ominous explanation is that wild chameleons are concentrated in areas like Madagascar and Africa, where habitat is being desolated by development.

"The major problem," according to Richard Leakey, director of the Kenya Wildlife Service, "is, of course, habitat destruction. Many chameleons are quite habitat-specific. When we destroy a particular habitat, we can eliminate a particular species. For this reason, some chameleons should certainly be listed as endangered rather than threatened. And the last thing we would

want is to compound the problem by encouraging the pet trade."

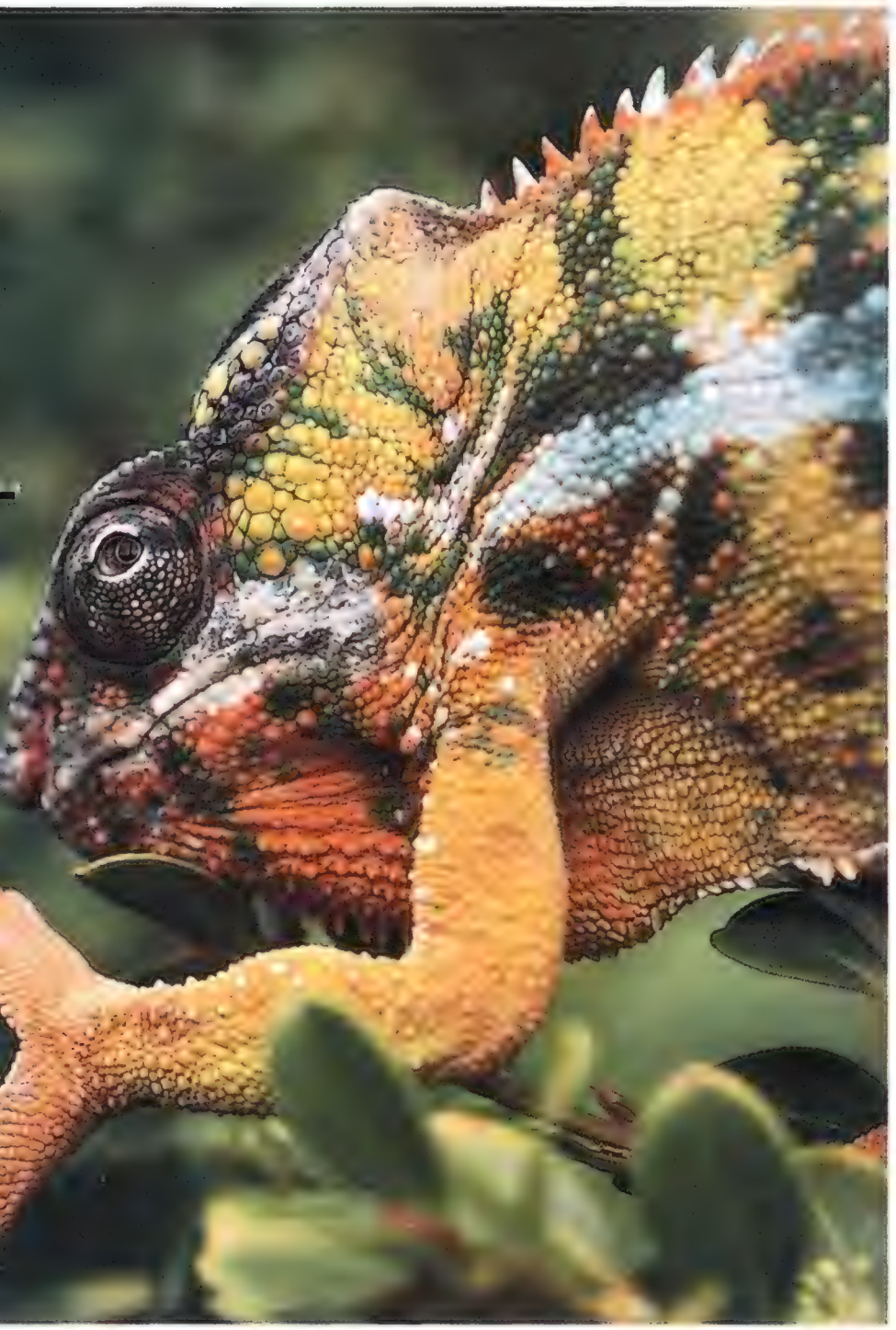
The desire for chameleons as exotic pets indisputably has taken its toll. Over the past four years, the number of chameleons brought into the United States has tripled, from about 5,000 in 1985 to about 15,000 in 1989. Some of the larger species are selling for $2,000 apiece. Figures on how many of these imported species survive do not exist, but experts agree that mortality rates for chameleons, which are often shipped under shockingly inadequate conditions, are high. When chameleons are collected in the wild for importers they are frequently torn off branches; because they hang on so tightly, their bones break. Typically, the lizards are shipped to a dealer, who keeps them for a while. A month may go by during which they are without food or water. Usually they land at a pet shop half-dead from malnutrition and so stressed that they are unable to fend off parasites. Even if the chameleons arrive healthy, few pet store workers have the expertise to care for them. People buy them, and a few weeks later the lizards are dead.

When my wife and I first started keeping chameleons the information available on behavior, care and feeding seemed limited. But as the future for chameleons becomes increasingly precarious, more wildlife biologists are studying these fascinating and puzzling creatures while there is still time. Recently, for instance, experts learned of the existence of the first species to be identified on the Greek mainland.

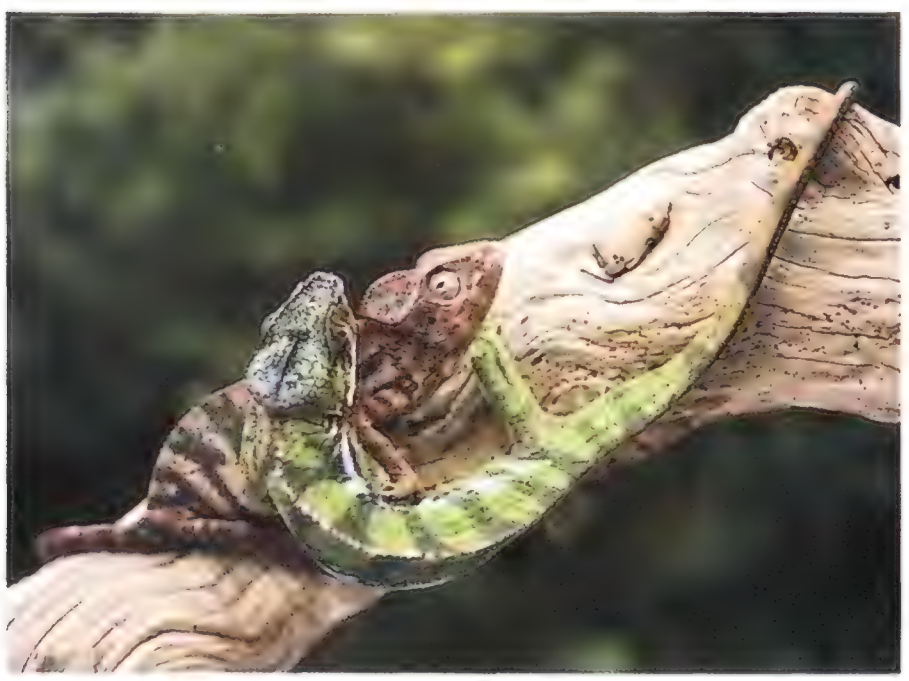
Ongoing studies cover everything from behavior to physiology. When Jonathan Losos, an evolutionary biologist from the University of California, Berkeley, set off for Nairobi, he was about to think, breathe and dream chameleons for more than two months. His expedition, headed by Al Bennett from the University of California, Irvine, ranged throughout Kenya. The

A male pardalis (right) confronting mirror image will flatten out, hiss, gape and sport all of his colors.

Flaunting his bright-green shade to a brown-hued female, a male pardalis attempts to initiate mating.



This is the same ritualized threat behavior as occurs when the male faces an opponent in the wild.



But the female shifts her body to spurn the attempt; already gravid, she laid 48 eggs on the following day.

purpose was to study how several closely related species evolved in their adaptation to different climates.

The biologists collected chameleons from distinct habitats at varying elevations—plucking them from temperate Nairobi gardens, from the slopes of Mount Kenya, where temperatures can fall to freezing, and from the hot, arid scrublands along the Tanzanian border. Collecting did present some drawbacks. "Oh yes, they bite all the time," Losos reports cheerfully. "Fortunately, they rarely break the skin." He and his colleagues hope to elucidate the physiology of adaptation to climate—a process that becomes increasingly important to understand as global warming occurs.

Caring for lizards round the clock

Curious about the movement of chameleons from one branch to another, biologist Jane Peterson of the University of Southern California has filmed and analyzed the "slow acrobatics" of her chameleon subjects. She has studied these creatures since her first research group of 75 arrived in terrible condition ten years ago. They had been left on a dock in Portugal because of a shipping error; she cared for them round the clock to keep them alive.

Peterson has concentrated on the musculature and bone structure of lizards, focusing on the shoulder. She discovered that some chameleons seem to have adapted in a way similar to primates, relying on rotating shoulder joints for movement. These flexible joints allow them to reach with their forelimbs in any direction for a branch and to span distances twice their body length. She speculates that this slow, methodical movement allows them to move quietly through the trees and not call attention to themselves.

Researchers, along with everybody else, are also intrigued by the chameleon's ability to change color. Chameleons alter their color according to light intensity, state of health, temperature and mood—not to match background. The story of a chameleon succumbing in its attempt to match a plaid shirt has no basis in fact. Contrary to myth, most color changes make them more conspicuous. Along with strong light, the acts of courting and of defending territory provoke the most dramatic transformations. When angry, our Jackson's changed from their usual uniform pale green to a mottled charcoal in less than a minute, and a diamond pattern appeared when they cruised the ceiling ropes. One male yellowed his lips to woo his would-be girlfriend, and another came out of surgery completely black. When the vet put him in my wife's hand, he quickly returned to a soft green.

Special cells containing various pigments lie in several distinct skin layers. Just under the outer skin lies a stratum containing yellow and green color cells. Next

Intimidating ornaments, the three horns on the head of this male Jackson's impress females—and rivals.

is a layer containing blue, white, red, orange and violet color cells. The deepest layer holds the brown-to-black pigment melanin, the substance responsible for tanning in humans. Melanin cells have a many-branched structure, so they can disperse the dark pigment from their center into their outer "arms," which reach into the upper skin layers. A stressed chameleon sends melanin toward the skin surface, blocking the layer of white cells and darkening the animal. Other color cells can expand or shrink: if yellow cells enlarge over blue cells, for instance, a calm green color results. While researchers believe they understand the mechanics of color change, the process for triggering the correct pattern—the link from brain to skin—remains a subject for investigation.

Displaying a puffed-up persona

Chameleons live solitary lives. Males, in particular, guard their territory jealously. Any intruder merits vigorous countermeasures. For most, territorial battles consist of aggressive displays, not physical contests. When two rivals meet, they turn sideways to the threat, flatten their bodies, curl their tails and thrust out their throats. They puff themselves up, presenting a literally inflated image. They replace mundane colors and patterns with a vibrant combination intended to intimidate. Both contenders understand the symbolism.

Finally they open their mouths, exposing the contrasting colors of their mucous membranes; this is often accompanied by a choreography of swaying and bobbing, punctuated by soft hisses. In most species, this signals the end of the conflict, as one of the antagonists will usually concede esthetic defeat and slink away, but several of the larger varieties will charge and inflict real damage, sometimes killing the adversary.

The eye is an optic wonder. Only the pupil peers out of a protruding dome of skin. Each eye takes in 180 degrees and operates independently of the other. How the creature's tiny brain can process shifting, complex spatial information is still something of a mystery. A chameleon can hunt and spy on predators without moving its head or body. Without both eyes functioning optimally, it will starve, unable to gauge the distance to its prey. (One researcher has demonstrated graphically the chameleon's dependence on eye-to-tongue coordination. She fitted out her subjects with custom-made goggles, distorting the magnification in the lenses. All chameleons so hindered were unable to capture the insects of their choice.)

When a chameleon spots a likely meal, both eyes converge on the target, giving the lizard a silly, cross-eyed look. After it rocks a bit to enhance its stereoscopic vision and confirm the range—a fraction of an inch off will cause a miss—its lightning tongue shoots out.

The tongue can extend as much as one and a half times the lizard's body length with dead-eye accuracy and blurring speed. A five-and-one-half-inch tongue reaches full extension in one-sixteenth of a second, fast enough to pluck a fly from the air. The tip of the tongue resembles a club. It's covered with a sticky saliva, and its abrasive surface grips as it sticks to the target, then reels the food in. Wet worms or slugs frustrate the system because the tongue won't stick.

Nature's experiments in chameleon design reached their zenith on Madagascar, where two-thirds of the world's species are concentrated. Before that island broke away from the African continent in the Mesozoic period, researchers believe, "proto" chameleons may have existed there. (The oldest known fossil chameleons date from the Miocene, tens of millions of years later.) Or, later chameleon émigrés may have floated over on "rafts" of vegetation.

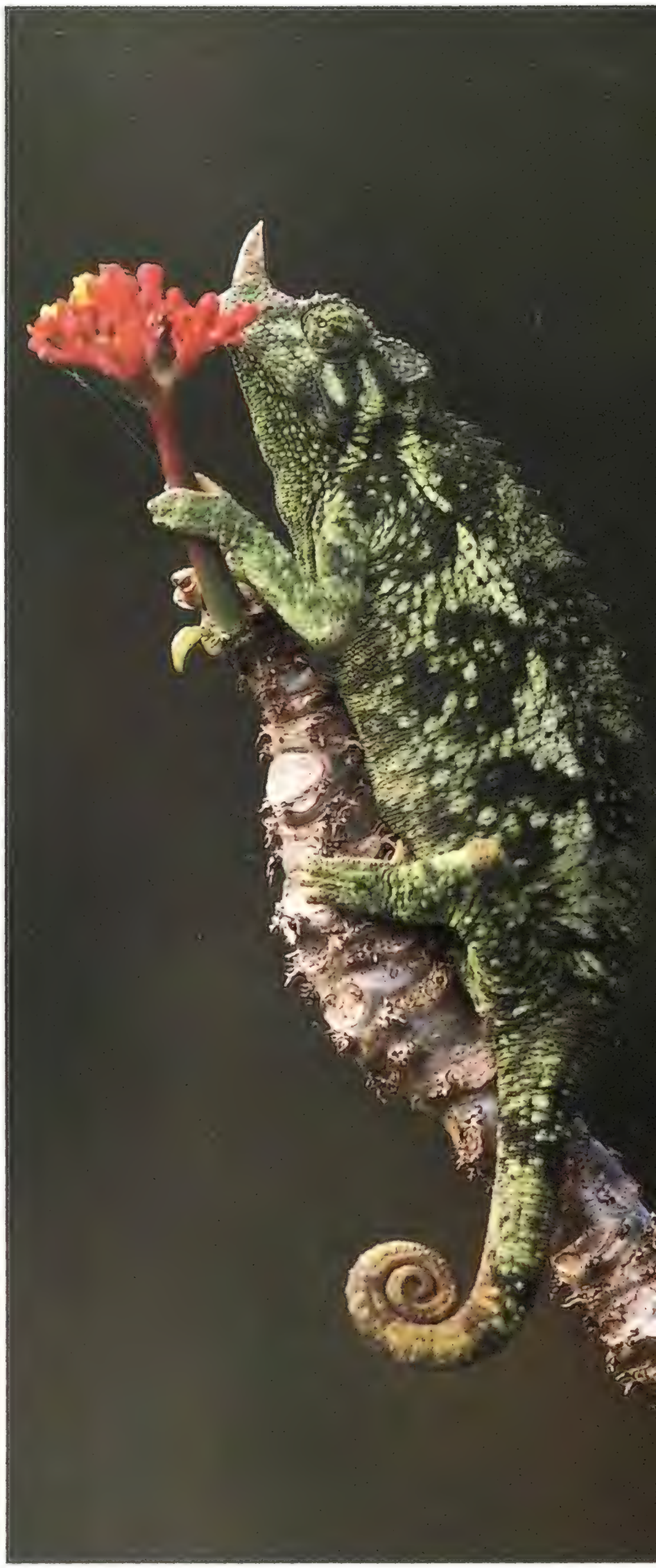
On Madagascar, chameleons embarked on divergent evolutionary journeys. Both the Oustalet's and Parson's chameleons may surpass two feet in length, zapping small rodents two feet away with their sticky tongues. The pardalis chameleon's quick color changes would fool anyone into thinking he had seen two different animals, and the jewel chameleon looks like a section from a Jackson (no relation) Pollock canvas. So far, the headlong deforestation of the island hasn't affected chameleons as cruelly as it has the lemurs and other indigenous animals. When a plantation supplants a forest, the more adaptable lizards may simply move into coffee groves, but other habitat-specific species do not fare so well; many balance on the edge of extinction.

For captive breeding, slow progress

For some chameleon species, the only hope may be captive breeding. (Successful propagation of this kind would also reduce the demand for imported chameleons.) Several zoos and at least one dealer are attempting captive breeding programs. Progress has been slow; the lizards do not reproduce well in captivity.

Laying eggs is a hazardous enterprise that the female chameleon undergoes several times a year. She descends from the trees and burrows deep in the ground; preparing a suitable space takes at least a day. After laying her eggs, usually from 30 to 50, she fills the tunnel and taps the ground flat with her feet. All this activity occurs in broad daylight. Months later the young emerge, hunting from the moment they hit the surface, all weapons systems operating at 100-percent efficiency. Still, mortality is high. Birds, shrews, snakes and lizards feed on the tiny animals.

Some African mainland chameleons, like Jackson's, have evolved a reproductive shortcut: live birth. We watched a pet Jackson's give birth to 38 babies from



A female Jackson's, her prehensile tail deftly spiraled, is characterized by more modest, one-horned display.

A member of one of the most fragile chameleon species, a female Senegal uses her prehensile tail, hooked around a stalk of red heliconia, as an anchor. The lizard's toes are bundled together to form a "V": the front feet have two toes on the outside and three on the inside; the back feet have just the opposite. This arrangement provides greater strength and stability.

atop a curtain rod. The newborns, encased in a thin membrane, hit the carpet, fought their way free and climbed to safety. We bought infant crickets for them, which they zapped on the first try. In the forest the mother would have pressed the offspring against the branch, and their sticky membranes would have adhered, but these newborns seemed unfazed by their fall.

California is the chameleon capital of the United States, and San Diego is their mecca—balmy temperatures and almost daily sun allow the lizards to be left outdoors, where they flourish. Cheryl DeWitt, a highly respected chameleon owner in the area, has had marked success in the difficult arena of chameleon breeding. When we visited her home, she was wearing a bright-red shirt blazoned with a gold lizard outline. Mesh cages and glass tanks holding more than a hundred reptiles lined the walls. An Egyptian chameleon balanced on a houseplant to bask under a lamp. Posters and toys celebrating reptiles completed the monothematic scene. Cages sat on the sun deck, each with a chameleon occupying a plant. "The Jackson's stay out unless there's a frost. They like the temperature change, but I bring the others in at night," DeWitt said.

"Chameleons are creatures of habit," she continued. "The Egyptian on the plant treks to the bottom of the stairs at 10 in the morning and waits for me to take him outside. And Mr. Rainbow, my male pardalis, climbs down from his curtain rod, where he sleeps, to fight with his reflection in a mirror every morning." When we visited Mr. Rainbow, he was engaged in combat with his mirror image, eyeball to eyeball with his stubborn opponent. Plainly, Mr. Rainbow deserves his name. As he fought he sported bright yellow tinged with rust, with vertical olive-green stripes and an irregular horizontal swath of aqua. An angry vermilion flamed on his throat. After DeWitt transferred him to a sunlit bush, his colors calmed to shades of green. But the introduction of a female onto the scene provoked yet another pattern. "He uses specific patterns for each situation," DeWitt explained. The female remained unimpressed, hissing and opening her jaws wide.

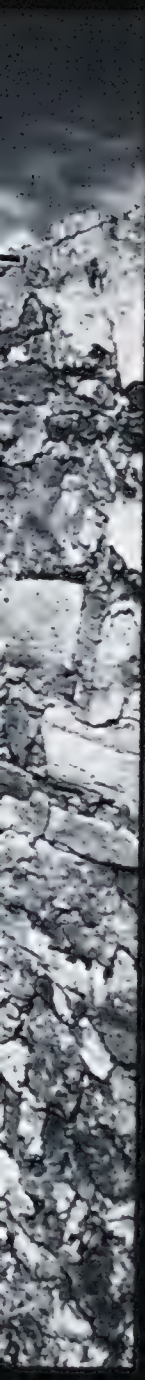
As DeWitt continued her tour, she held an infant Jackson's perched on her fingertip, incipient horns budding on his forehead. "Some chameleons can adapt to loss of habitat, but most won't," she said. "If we don't learn how to raise them in captivity, we'll lose a lot of varieties soon. I intend to do my part."

At the San Diego Zoo, where a number of chameleons thrive, reptile expert Susan Shafer has unequivocal praise for Cheryl DeWitt: "She's doing a magnificent job, but this is a rare exception. Pet owners should not try to take on captive breeding. It's a task that requires extraordinary devotion."

As time runs short for some of these winsome and dramatically beautiful lizards, many of their mysteries may never be solved. "But the real tragedy," says Jonathan Losos, "is that species may well disappear even before we have a chance to identify them—or understand them."

Chameleon (center) disguised in camouflage coloring is barely discernible against the bark of the tree trunk.

Joseph Jachna, *Door County*



"Vision is the art
of seeing things invisible."

Jonathan Swift

The future is composed of
insights reflected by what we learn today.

At Toshiba, we've been turning
those insights into a tangible future for
over one hundred years.

Sustaining it now with our
commitment to manufacturing in the U.S.
And with a wide diversity of products
of the highest quality.

All of which have helped make us
one of the leading electrical and electronic
manufacturers in the world.

With a unique perspective that
helps us imagine a better tomorrow.

In Touch with Tomorrow
TOSHIBA

Color TVs & VCRs

Computers & Printers

Copiers

CT Scanners

Digital Instrumentation

Disk Drives

Facsimile Systems

Home Appliances

Industrial Motors & Controls

Liquid Crystal Displays

Medical Tubes

MR Imaging

Nuclear Medicine

OPTO Electronic Devices

Picture Tubes

Portable Audio

Professional Video Systems

Room Air Conditioners

Semiconductors

Telecommunication Systems

Turbines & Generators

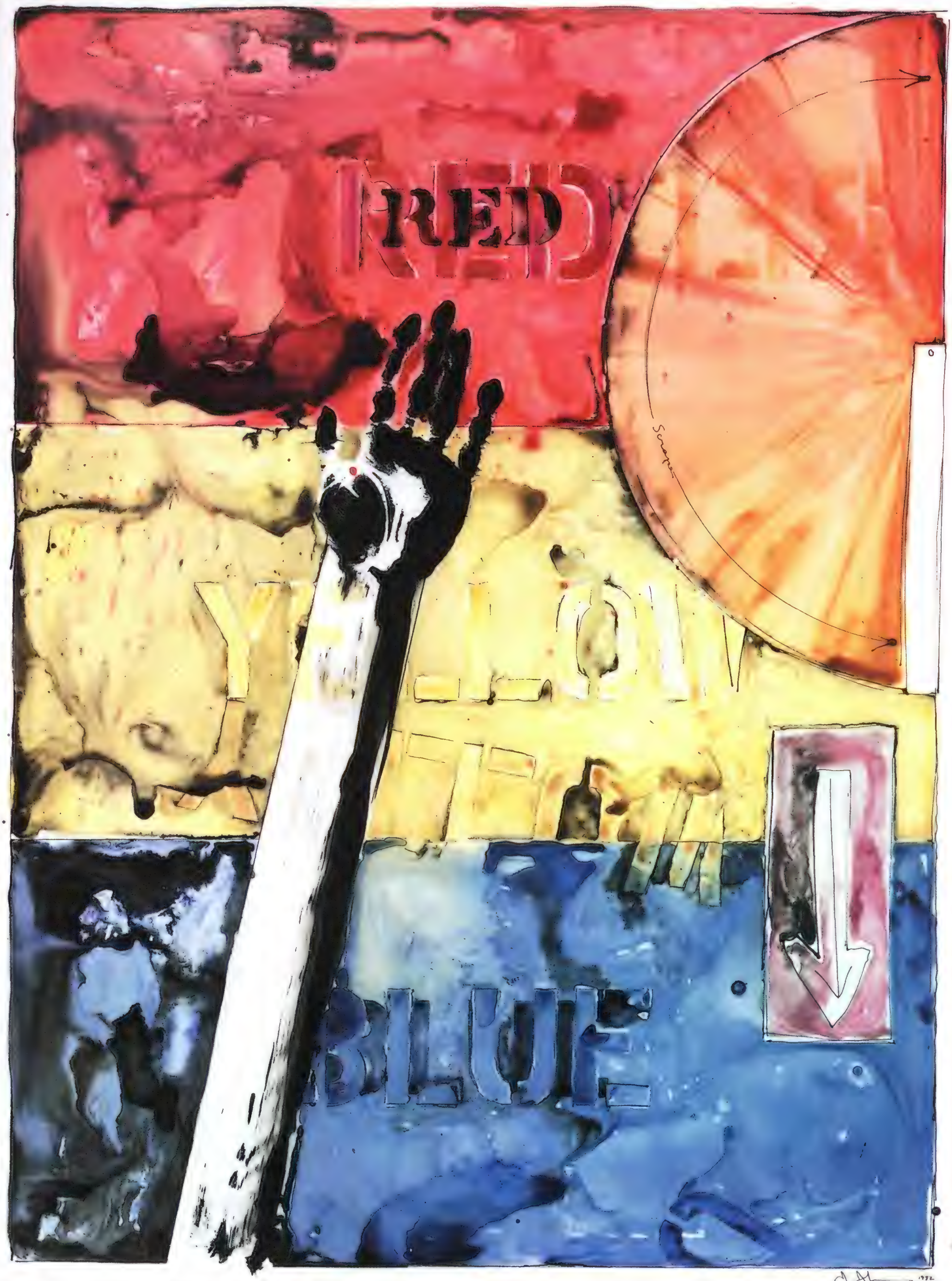
Ultrasound

Uninterruptible Power Supply

Variable Speed Drives

X-Ray Systems

Collection the artist



By Helen Dudar

Enigmatic, distant, Jasper Johns is at the top of his form

Now well into his fourth decade of critical acclaim and public recognition, the artist is as polite, remote and mysterious as ever

In a portrait made of Johns at age 58, Hans Namuth captured the artist's uncompromising character.

In February, the Walker Art Center in Minneapolis opened an immense exhibition of Jasper Johns prints with the standard museum celebratory weekend. For the occasion, his dealer, the legendary Leo Castelli, traveled there from New York in the company of a small group of friends, associates and favorite collectors, a kind of floating support group that appears to stand in for Johns' family. Some of them were in Italy for the Venice Biennale in 1988 when Johns carried off the Grand Prize, the Golden Lion. Later that year, the Venice show came to Philadelphia, and more of them made that trip. This month, they will surely be found in Washington for the National Gallery of Art's homage—a lavish offering of Jasper Johns drawings.

Events of this sort do not greatly vary. There is usually a dinner graced by local celebrities—former Vice President Walter Mondale and his wife, Joan, came to the Walker evening for the launch of "Jasper Johns: Printed Symbols." There may be readings; in Minneapolis, composer John Cage, an old friend, recited a long, loving tribute. And there is always the artist, courtly, reserved, somewhat remote, intensely concerned with how his work is shown. At a brief ceremony in the Walker auditorium, the director, Martin Friedman, announced that when he had finished speaking, he would introduce Johns from the audience. Friedman had been warned, and so were the guests: "He will stand and say nothing."

On less-public occasions, Johns does, of course, speak, with impenetrable courtesy, without a trace of his South Carolina origins, in elegant, ironic, guarded language deftly veiled against untoward intrusion. After a close, harmonious working relationship that has endured for 33 years, Leo Castelli can still be heard referring to his gallery's most important artist as "*so* mysterious." And a member of the New York art community who has known him nearly as long says that at any fresh encounter he is still startled by how oblique Johns can be. "You ask Jasper what time it is and the kind of answer you get might be something like, 'I didn't know you were interested in time.' "

The art offers no easier access. From those first deadpan images of the late 1950s—the flags and targets and assemblages of letters and numbers—to the later surreal and possibly more personal meditations on living and dying, the work has been difficult and demanding. To the attentive student, it has also been rewarding, a kind of decades-long conversation with a vividly intelligent, quietly desolate man obsessed with, among other things, visual perception, the ways we see and the ways we fail to see. As a scholar of his work, Roberta Bernstein, once wrote, "For Johns, the eye is an extension of the mind. . . ." In short, the mechanism for seeing is also "the central vehicle for thinking and feeling."

Johns likes to rework his ideas; *Land's End*, 1982, was based on a painting he had done 19 years earlier.

It would be hard to argue that this privileged union of senses is unique to Johns. Still, few other artists are likely to have achieved his rarefied status. Rummaging through the literature of adulation, you will learn that Jasper Johns is "the closest thing American art has to a living national treasure"; "the most important artist of the second half of the century"; "*le peintre américain le plus important depuis Pollock*" ("the most important American painter since Pollock"); and "the deepest of living American artists."

Just one of those accolades would surely qualify him for the National Gallery show, "The Drawings of Jasper Johns," which is only the second exhibition conferred on a living artist in the museum's 49-year history. (With unnerving contrasting symmetry, the first, in 1987, put its spaces at the service of Andrew Wyeth's nearly photographic renderings of "Helga," clothed and bare.) The show opens May 20, five days after Johns' 60th birthday, and will remain through July 29. It was organized by Nan Rosenthal, the gallery's curator of 20th-century art, and Ruth E. Fine, curator of modern prints and drawings.

From Washington, the drawings will move to the Kunstmuseum Basel, Switzerland, August 19-October 28; and then to the Hayward Gallery, London, November 29-February 3, 1991. (The traveling schedule for the Walker Art Center prints exhibition, after it closes on May 13, will be the Museum of Fine Arts, Houston, June 17-August 19; the Fine Arts Museums of San Francisco, September 15-November 18; the Montreal Museum of Fine Arts, December 14-March 10, 1991; the St. Louis Art Museum, April 6-May 27; the Center for the Fine Arts, Miami, June 22-August 18; and the Brooklyn Museum, September 14-November 10.)

The work is full of visual puns

The Washington event is the first major offering of Jasper Johns drawings in 15 years, and to anyone who has never seen more than a few, the 117 pieces assembled by the Rosenthal-Fine team—out of 400 master drawings—are an amazement. The average museumgoer is apt to think of drawing as a kind of diary, the artist's gift of swift, intimate scrawls that usually precede paintings, a little window into his creative soul. As it happens, Johns' working sketchbook is profoundly personal, closed to all but a few friends, and there is not much that is spontaneous or intimate about his public works on paper. Like the prints, they are usually made after he has put his ideas on canvas. And they repeat familiar painted images endlessly, always with some obvious or subtle variation, to some hidden or obvious purpose. The work is full of visual puns, according to Rosenthal, and to move from drawing to drawing, observing changes, is to see the artist at play,

Nancy Ganz Wright

Also based on an earlier painting, *Harlem Light* is an intricate drawing of graphite wash and other media.

Collection of Janie C. Lee

Watercolor, pastel and graphite *Flag on Orange Field*, 1957, is from series of iconic paintings begun in 1954.

The stone-wall pattern refers to an actual wall Johns saw in Harlem and then painted from memory.

Ms. Valerie Mnuchin

Johns began to use hatchmarks in 1972. *Cicada*, which is dated 1979-84, is of ink and oil paint on plastic.

"deeply serious play." In a sense, she writes in her catalog essay, these drawings are "art about art."

They are frequently huge, always elaborately worked and often a surprise. One of Johns' early shocks to bourgeois sensibility was a bronze sculpture, to scale, of two Ballantine ale cans. He returned to the theme several times. Eighteen years after the original sculpture, he returned to it yet again, this time drawing on plastic in ink and luminous color. Suddenly, a pair of Jasper Johns ale cans glow like mysterious holy objects.

Few artists juggle such a range of materials. Pen, pencil, charcoal, crayon, chalk, pastel, watercolor and collaged scraps of newspaper may be put to the service of his drawings. Johns has left handprints on paper in emulation of a hatchmark pattern that dominated his work in the 1970s, and he has used the imprints of a packaged sweet, Morning Coffee Cookies, to embellish a piece. The results can be commanding and rich.

"Rich" inevitably has multiple connotations in the context of his work. If they know nothing else, even the most indifferent observers may know that not long ago, S. I. Newhouse jr., chairman of Condé Nast Publications and a major collector of Johns' work, successfully bid $17 million, a record at the time, for *False Start*, a vibrantly colored piece painted 29 years earlier. Johns was at his house on St. Martin when the auction took place, and Castelli called to give him the news. As he remembers it, the artist's response was an uninflected "Oh."

The impact of record-setting prices

The works of Jasper Johns have been setting records almost from the start. Flattering though this may be, it is hard not to wonder whether it could also be burdensome. That kind of question causes Johns to retreat to the third person, as if he were discussing a distant cousin: "One can say, 'It has nothing to do with me, it only has to do with this object . . .' " he comments. "But of course one is attached in some way to one's work and feels it has some sort of meaning. An ambiguous situation is set up where the meaning given to the work by the society, if you will, becomes unclear."

If Johns is evasive, some of his friends will shoulder the discomfort. In an interview, a young dealer who has done some business for him professed indignation at all the talk of "money, money, money" and announced that if this disagreeable subject were to find its way into print, he would not allow his name to be used. Happily, the art market is not a shrine to consistency. Hardly a moment later, he reported the encouraging news that at least Johns prints are still modestly priced. A recent piece, *Winter*, part of a series entitled *The Seasons*, can be had for $15,000 to $18,000, he said, and "most people can afford that."

Collection the artist

In *Summer*, the figure at right is a tracing of Johns' shadow; the Mona Lisa is an homage to Leonardo.

At auction, the bargain hunter can also find prints for less or for more, much more. Last fall's Sotheby's Contemporary Print sale saw a rare graphic series go for $275,000; the 65 lots by Johns sold that day brought their owners a total of $3,855,500.

Leo Castelli, small, elegant, welcoming, gentle and generous—one of the first dealers in the United States to pay young artists a monthly stipend—is less reticent about price. Shortly after the National Gallery opening, he plans a Johns show: some drawings and prints and perhaps nine new paintings. Three years ago, at the exhibition of *The Seasons*, the prices for the big paintings averaged $575,000. At the next show, they were up to $850,000. Castelli is not sure, but he supposes that this time large paintings may be priced as high as $1 million.

By opening day, every one will probably have been sold. There are perhaps a dozen serious collectors of Jasper Johns paintings in this country, and most of them regularly woo Castelli for the favor of an early viewing of new work. If they have what he calls "certain privileges," it is because he can be sure that any painting they buy is destined for a wall at home. The value of a new Johns canvas can double or triple in no time at all, and Castelli is not interested in selling to a speculator who aims to store a work briefly and then make a quick, easy profit on resale.

The material rewards of this kind of success are, at the very least, comforting. In addition to the place on St. Martin, a Southerner's refuge from winter cold, Johns has a modest country retreat upstate in Rockland County, New York, and a recently acquired townhouse in Manhattan—an unusual double-width structure built around a central courtyard, it was once the home of another kind of artist, the fabled stripper Gypsy Rose Lee.

A move to New York and a new life

There one day he sits at his kitchen table cradling a cup of coffee and patiently answering questions, sometimes punctuating a cleverly uninformative comment with a large, engaging guffaw. The chaste, controlled decorative style of this room and others through which he leads a visitor gives new meaning to the concept of minimalism. Large empty spaces dominate, and nowhere is there a hint of clutter. Most artists' studios are surrounds of warm disorder; his, a spacious backroom, is almost antiseptically neat.

The place, of course, is a feast of fine art, other people's as well as his own. (The largest private collection of Jasper Johns works, according to Castelli, is in the hands of their maker.) The sitting room holds, among other things, a John Chamberlain crushed metal scupture; two small Kurt Schwitters collages;

Volvo Has Built A Reputation For Surviving Accidents. Subaru Has Built A Reputation For Avoiding Them.

The Volvo 240 has done a fine job of surviving accidents. And we, at Subaru, have always admired that.

So we gave the new Subaru Legacy unibody construction like the Volvo 240.

But at Subaru, we think there's something even better than surviving accidents. And that's not getting into them in the first place.

So unlike the 240, the Subaru Legacy offers an optional anti-lock braking system (ABS). A feature that pumps your brakes automatically for maximum maneuverability and gives you much greater steering control during heavy braking.

Unlike the 240, the Subaru Legacy is available with full-time four wheel drive. A more civilized form of four wheel drive giving you greater traction on smooth high speed highways as well as on washboard dirt roads.

And unlike most cars in the world, the Subaru Legacy comes with both four wheel disc brakes and independent suspension.

At Subaru, we know that even cars not involved in accidents can eventually come apart. So every Subaru is put together to stay together through conditions which drive other cars into the ground. Of course, we can't guarantee how long every one of our cars will last. But we do know 93% of all Subaru cars registered in America since 1979 are still on the road.*

And the new Subaru Legacy may even surpass that record for durability. A Subaru Legacy has broken the FIA World Speed/Endurance record by running 19 days at an average speed of 138.8 mph for more than 62,000 miles.**

So you see, it wasn't just accidents the Subaru Legacy was designed to avoid. But junk yards as well.

*R.L. Polk & Co. Statistics, July 1, 1988. **Validated by the Federation Internationale De L'Automobile.

Subaru® Legacy™

We Built Our Reputation By Building A Better Car.

Mr. and Mrs. John Hilson

Unusual turbulence and intensity of color mark *Untitled*, a drawing of ink on plastic, dated 1983-84. His subject here is sewage, and the dominant image is of a backhoe, with its scoop extended at right.

several Andy Warhol Heinz boxes serving as end tables; Man Ray's witty *Cadeau*, the flatiron bristling with tacks. On the coffee table, a few art books are lined up with conspicuous precision. There is also a telephone console bearing four numbers. This is a busy place.

It is the kind of house dating from World War I in which you expect to see a fireplace in every room. Johns confides that he had most of them removed: they reminded him of his boyhood when firewood was the only source of heat, and lugging logs from the yard was a daily and deeply resented chore. The small detail is startling because Johns is not much given to reminiscing about the joyless odyssey of his childhood, years in which he seems to have been moved about like a misaddressed package. His parents parted soon after his birth in Georgia, and he was sent to live with grandparents in Allendale, South Carolina. "My family were very narrow in a sense, provincial, sort of country people. The men were all farmers and the women schoolteachers." No one ever talked about family history and only lately, with hardly anyone alive to ask, has he begun to wonder about it.

Johns had finished the third grade when his grandfather died and he was shipped off to Columbia to his remarried mother and her new family. A year later, he departed for what would be six years with an aunt who taught school in a tiny lake town. Then, back again in the maternal household, he finished his final high school terms, a lanky, reserved, well-mannered boy who drew all the time and whose favorite color would forever be gray.

His speech carries no hint of his origins. Where did the drawl go? He's not sure. Possibly, he speculates, he lost it playing around in college theater. His grandfather left land to be sold to pay for his education, and Johns spent a few semesters at the University of South Carolina before heading to New York to begin his life as an artist.

Time has eroded and grayed a cap of fine platinum

Helen Dudar is a New York author and critic. Her recent articles in SMITHSONIAN *include profiles of John Marin (February) and Man Ray (December 1988).*

IT'S A PENTAX! IT'S A ZOOM! IT'S SUPER IQ!

Look! Up in the sky! Faster than a speeding shutter! More powerful than other zooms! Able to automatically focus, zoom, flash—in a single bound.

This amazing new camera from the company that brought you the first automatic zooms, has features and abilities far beyond those of common zooms.

Disguised as a mild-mannered compact, Super IQ, with its 38-105mm zoom lens, can help you change the course of picture taking. Become a master of creative lighting effects with Exposure Compensation. Capture yourself up to five times in a row with Multi-Frame Self-Timer. Get super close with Super Macro. And more.

Once again, Pentax saves the day with simplicity, creativity, and better pictures.

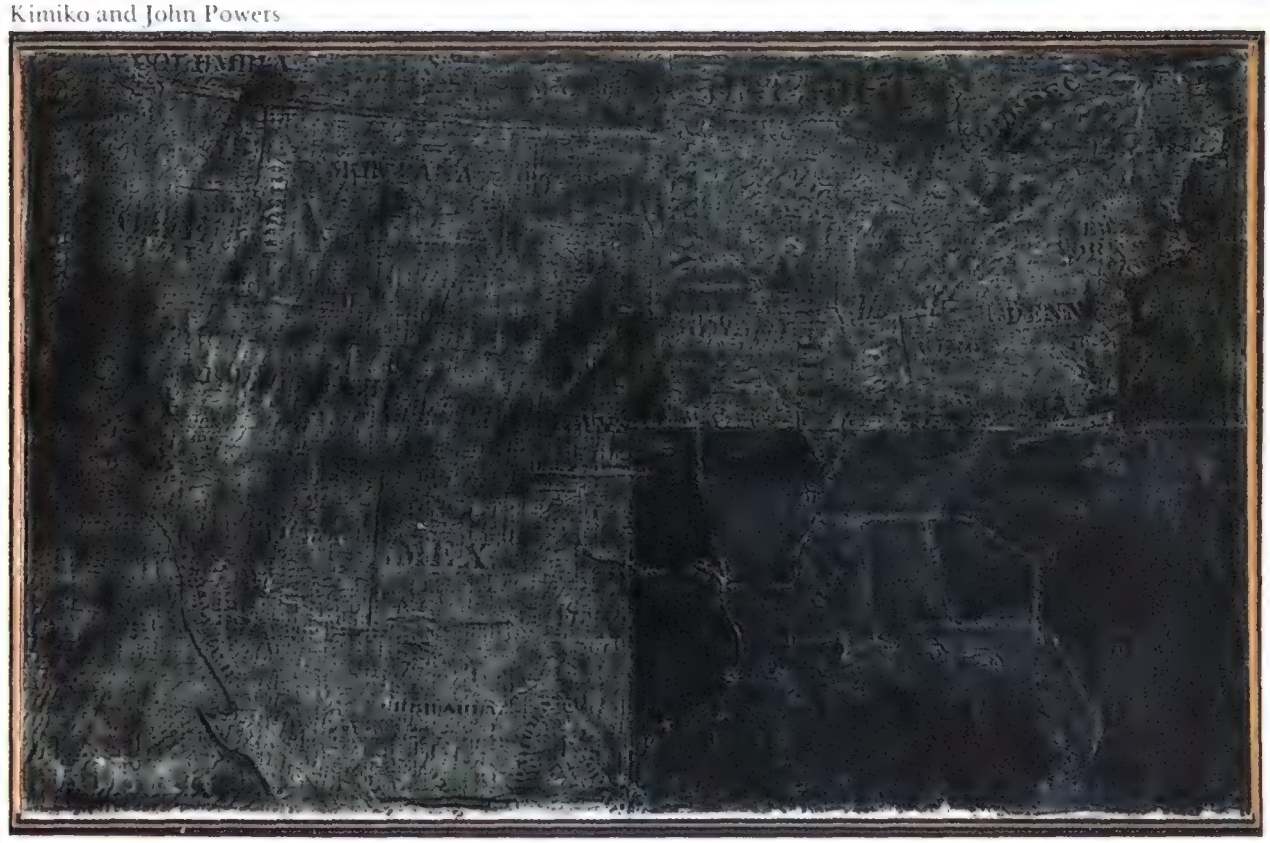
PENTAX IQZoom 105 Super

© 1990 PENTAX CORP

Solomon & Company Fine Art, New York

Painting with Two Balls, a drawing, poises balls between two panels and sets up a balancing act that plays tension against subtle coloration. Johns' richly colored paintings of the 1980s followed this work.

Kimiko and John Powers



Map, 1965, is from one of Johns' series of readily recognizable objects that are now widely known. *Map* series was begun in the '60s and ended in 1971. Variously interpreted, the drawing, when viewed upside down, resembles the flag.

hair; the pleasures of the table—he is a talented cook—have fleshed out the frame. In the kitchen, he rises now and then to refill his cup, always asking with elaborate courtesy, "May I give you more coffee?" On the wall behind him is a Johns hatchmark painting, this one set down in uncharacteristically pale, gentle tones. On top of a high wall cabinet is his small collection of George Ohr pots, the work of the turn-of-the-century craftsman known fondly as "the mad potter of Biloxi" (*Highlights continued*, March 1990). Brilliantly glazed, the pieces had been punched and pleated into the kind of eccentric shapes that beguile Johns' eye, and some of them have found their way into recent paintings.

Johns' rate of painting is increasingly unhurried; in all these years he has turned out little more than 300 canvases. If there is a reason for this leisurely pace, he appears indifferent to the notion of investigating it. He will paint for a while, then perhaps gaze at the canvas for a while or, if he is in St. Martin, go off to swim or garden for a while. Rarely will he abandon a piece. "I don't like to do that. I just keep putting more stuff on top so I don't feel I'm abandoning it." This statement is followed by one of his big laughs. No, he says more seriously, he wouldn't exactly consider it a defeat to give up a canvas. "I think I associate [abandonment] with a period in my life when I didn't finish what I set out to do. It holds a kind of fear to me to throw something away."

He is equally frugal in the print shop and, given the more modest hours involved, more prolific. There are about 330 prints, and a full set of them is now in possession of the Walker Art Center through several gifts. Some came from Ken Tyler, a master printer who worked with Johns years ago at Gemini G.E.L., a printing company in Los Angeles; the rest, 240 pieces owned by Johns, were bought for a relatively modest price with a private donation of what has been said to have been several million dollars.

Tyler has watched some major contemporary figures work at graphics, and he says, "I can tell you there are few artists who have the gifts and the talent and the willpower and the discipline to keep doing this. Jasper makes every nuance work for him and he makes every printing element work for him." Johns is also—and one sometimes forgets how essential this is to the labor of art—willing to undertake the most tedious detail. At Gemini once, he turned out a lead relief titled *Bread*, an edition of 60 slices of white "bread," which he then patiently spent several weeks hand-coloring, good-naturedly enduring the printers' jibes that the place might be renamed "The Jasper Johns Bakery."

One of the striking aspects of Johns' history is that he is largely, brilliantly, self-taught. He came North at 19, briefly tried art school and then was drafted into the Army. Out of uniform and back in New York, he clerked in a bookshop and began to work at art. It could be said that his serious education was launched in 1954 when he met and began a crucial relationship with Robert Rauschenberg, a Texan, an avant-garde artist who had already been noticed, a generous spirit who shared ideas, friends and even work. For some years, the two men lived and painted in the same downtown loft building, and when money was needed, they collaborated, under the pseudonym of Matson Jones, on some memorable, meticulously realistic window displays for Tiffany's.

Collection the artist

Drawing of *Ale Cans*, 1978, is based on a famous cast sculpture of 1960, now a jewel of international art.

It was Rauschenberg whom Castelli, just embarked on his gallery venture, came to visit in 1957; it was the discovery that Johns lived downstairs that stirred his dealer fever. Not long before, Castelli had been transfixed by a Johns piece, *Green Target*, that hung in a Jewish Museum show. Johns got his first one-man show, before Rauschenberg, at Castelli's gallery in January 1958. People in the business of looking at art still recall that event the way one remembers momentous visual experiences: the first sight of Chartres cathedral, for example, looming on the flat horizon of the countryside.

In the decade of the reign of Abstract Expressionism, this unknown young man was painting *recognizable* objects and symbols as commonplace and thus usually as unnoticed as the linoleum on a farmhouse kitchen floor. What was exhilarating and unnerving were the sumptuous surfaces—Johns painted flags and numbers as if they were erotic objects. This artist had learned how to control a volcanic array of emotion by keeping the imagery at bay.

The show was a sensation, a kind of nose-thumbing at abstract art and, as would soon become obvious, a bridge to the approaching Pop Art. All but two pieces were sold, and the buyers included the Museum of Modern Art, which carried away at least two paintings for its collection. Of course, not everyone loved the work. The flag paintings fretted a few literal-minded people who worried needlessly over whether they were intended as mockery. Some dissenters dismissed the work as neo-Dada, although, in truth, Johns had not yet discovered the work of either Duchamp or Man Ray. One scholar, momentarily depressed by these alien pictures, told himself he was witness to "the death of painting." The eminent art historian Robert Rosenblum, then a graduate student who earned spare cash writing notices for an art periodical, was one of the few applauding reviewers. Even today, he remembers that first encounter: "I walked into the gallery and saw targets and flags, and my jaw dropped. I didn't know what it was. It would not compute. It had a kind of clarity about it; it was so straightforward and at the same time so unstraightforward. Everything about it was 'wrong' and didn't fit any category, and you couldn't get it out of your head."

Almost overnight, Johns had achieved economic security, fame and loyal collectors. In New York, art patrons not only collect art, they expect to collect the company of the artist. Johns is open to social friendships of this sort, but Castelli recalls that the late Robert Scull, a taxi fleet owner who orchestrated his own fame around a contemporary collection, became so demanding and so fixed on the artist that Johns icily retreated. According to Castelli, the skull in the lower right corner of a 1963-64 work, *Arrive/Depart*, represents the painter's sardonic dismissal of the taximan.

On the other hand, his loyalty can be munificent. Once, at dinner, the late Victor Ganz, a collector with an impeccable eye, mentioned to Johns that a ceiling leak in his office had ruined two prints. The colors had run. Johns was mystified; it shouldn't have happened. As he was leaving he said, "Let me have a look at those prints; I'll take them home." A few weeks later, Sally Ganz remembers, a messenger arrived to return the pieces. The Ganzes discovered that they now owned two damaged Johns prints disguised as watercolors. When Johns called up a few mornings later, he was surprised to get Victor Ganz on the phone. "How is it you're still home this morning?" he asked. "I stayed home to pour water on all my Johns prints," Ganz replied amiably.

A question of autobiography

One of the hallmarks of a master is that he never stops exploring. There are 35 years' worth of paintings, drawings and prints of flags, dozens of them, each wrought to some different visual purpose. Every ten years or so, there is definable alteration in style. In the late '60s and on into the '70s Johns was drawn to strongly abstract imagery; paintings appeared in flagstone and hatchmark patterns, designs once briefly glimpsed on the road and adopted because, as he liked to say, they had been *taken*. "They are not mine."

In the past decade came another major change: paintings with recognizable imagery that seemed to be

In 1990, millions will take organized tours of Europe. And a handful will design their own.

KLM Royal Dutch Airlines has created a program that lets you be the architect of your own vacation. While KLM does all the construction work. The program is Europe By Design℠, and it is simplicity from start to finish.

We provide you with a menu of "building blocks" to make a vacation—a menu comprising some of Europe's most intriguing venues and experiences. These might include a visit to an excavation under Rome. Or horseback riding through the Tuscan countryside. Or learning the nuances of the waltz in Vienna.

You choose from dozens of such experiences, and KLM takes it from there. We arrange all the details of hotels, transportation and excursions. Giving you the freedom of independent travel at rates that only mass travel used to enjoy.

To design a trip to a Europe that's usually reserved for insiders, call KLM at 1-800-777-1668. We'll send you our free 140-page Europe By Design vacation planner. Or simply call your travel agent.

KLM Royal Dutch Airlines

KLM Europe By Design℠.

a sort of reportage about the artist, his literary interests, his possessions and his obsessions. Among other things, he was entranced by imagery that represented two things at once, an old design that could be a duck or a bunny, a face that carried the profiles of a young beauty and a crone.

The four big pieces of *The Seasons* not only abound with personal references to his life and work, but each is dominated by the figure of the artist, actually taken from an outline of his body as it appeared in shadow in the sun. Of course, the fact that Johns is represented by a shadow, and a transparent shadow at that, should occasion some wonder about how much revelation the pictures offer.

Still, the critical community triumphantly reported the "autobiography" of the new work: at last, they had caught Johns with his guard down. Now, in his kitchen, a question on this subject produces a long silence while he searches for useful phrases to express denial. Finally he says, "Well, they're not narrative, so they're not autobiographical in that sense. Some of the images in the paintings are taken from things [that are Johns'], but I don't see how that's more autobiographical than those taken from other places."

A little later, he stands in the middle of his light-flooded workroom gazing on a recent painting set out by his studio assistant. On a peach-toned background, facial fragments are scattered about—parts of eyes, a female mouth, the outline of nostrils. The picture also has a framed portrait of a small red-sailed boat. The printing on the top spells out "Montez" and another line in barely discernible letters says "Singing." The piece carries the first name of his grandmother, who, he explains, used to sit at the piano playing and singing "Red Sails in the Sunset."

It seems pointless to inquire about the uses of autobiography here. Besides, in this setting, it is hard to choose between admiring the painting or its maker. As he gazes silently on his work, Johns resembles nothing so much as one of those trompe l'oeil elements he dotes on. The expression on his face is at once coolly remote and warmly involved, skeptical and pleased, secret and open—altogether a living model of a Jasper Johns work of art.

Laden with symbols, *Untitled*, a 1988 drawing that is a compendium of imagery, displays the artist's shift in the '80s toward works composed of many disparate elements, all of which are referential or symbolic.

Mr. and Mrs. Irving Mathews

OUR FIRST SUBMARINE DID ONLY ONE REMARKABLE THING. IT CAME BACK UP.

John Holland invented the first submarine accepted by the U.S. Navy. Amazed reports said, "She goes like a fish and dives better than one."

Squeezed into a crude, 14-foot craft, John P. Holland proved the basic principles of the submarine in 1878.

His poetically named "Boat No. 1" was hauled to the Passaic River by 16 stallions for testing. It stuck in the mud, it leaked, but it came back up.

The only thing more remarkable than the submarine itself was the courage of the submariner. Something that's still true today.

Holland got his Electric Boat Company, our earliest ancestor, off to a strong start in 1900, when the 74-ton submersible Holland became the U.S. Navy's first submarine. Showing his enthusiasm for this new type vessel, President Theodore Roosevelt alarmed bodyguards by taking an unscheduled dive aboard a Plunger, August 25, 1905.

USS Nautilus was the first vessel to radio, "Underway on nuclear power." She then became the first to sail under the North Pole.

Running silent as well as deep became possible in 1933, when Electric Boat launched Cuttlefish, the innovative prototype for all World War II Navy submarines.

USS Helena, 688-class submarine.

But it was on January 17, 1955, that we introduced the most dramatic improvement in submarines since John Holland and Boat No. 1. It was Nautilus, the world's first atom-powered vessel. In an astonishing adventure, she also became the first submarine to sail under the North Pole.

Today's most advanced submarines are our Tridents. Longer than the Washington Monument is tall, they are so carefully made that they cruise in virtual silence.

Yet innovations continue. Seawolf, a new class of submarine now under construction in our yards, will advance submarine science into the next century.

Seawolf will re-prove two principles first proved by John Holland and Boat No. 1. That under deep water is found man's highest technology. And his highest courage.

Dedication to both has kept us improving American submarines for 90 years.

GENERAL DYNAMICS

A Strong Company For A Strong Country

By Fred Hapgood

The lab that is putting a new face on the computer

At MIT's Media Lab, researchers are giving computers senses like vision and touch, making them easier for us to get along with

A visitor wandering around the Massachusetts Institute of Technology might find it a grim and puritan bit of the globe, but the knowing can find entertainment. The Folk Dance Society has a full calendar; the Science Fiction Club, which boasts the largest holdings of the genre in the world, is happy to see new readers. And if the mood and timing are right, a person might repair to the Media Lab, enter the offices of the Spatial Imaging Group (SPI), settle behind the glass wall separating them from the general building corridor outside, and sit and watch the pilgrims of the cutting edge get whacked out.

The pilgrims are the technotourists whose job or passion is to know where tomorrow is happening today. They can be found anywhere at MIT, of course, antennae out, listening for next week's buzzwords, gobbling up the jargon, but the Media Lab is a major watering hole. You can sit in the SPI offices and watch the whole tribe flow by: Japanese architects, scouts for Dutch venture capital, high-tech newsletter editors and other science-media factotums, technology-stock analysts up from New York, Silicon Valley VPs for corporate R&D, "futurologists" from some sensory-deprivation float tank, strategic-marketing consultants, science fiction writers, technology artists, science museum exhibit designers. . . They come scrambling by, bent forward, focused on their next appointment, looking down the hallway for some navigational cue, hot on the spoor of Tomorrowland, when, in a micromoment, *ZAPZAPZAPZAP*: bang in the retina.

First they freeze, as though an elastic tether had reached its limit. You can almost make out the words forming over their heads. "*What* was *that?*" They hang in space for a second. "Did that wall . . . *blink?*" And then they back up, turning to face the glassed-in offices and stand staring, silent, like fanciers watching some new breed of tropical fish, looking not a little like tropical fish themselves. You can stare right back; they won't be bothered. They're not looking through the glass at all; they're looking *on* it.

Specifically, they are looking at four experiments in holography, the technology of perceiving three dimensions directly, without special lenses, from a two-dimensional image. The basic technology is not new, but these particular images—a still life of metallic fruits, an MR scan (magnetic resonance image) of a brain, a portrait of Leonardo, and an image of a sports car—are unlike other holograms in being visible only to viewers standing directly in front of them (within an arc of about 30 degrees). When an image recorded with this technology is mounted on a piece of transparent film, a person approaching will notice nothing until he is immediately opposite, at the moment of closest approach. At that second the hologram will pop into view, will explode out of his peripheral vision, with a vividness that feels like a graphic pop in the face. The effect is of an art gallery that peeks out of some alternate dimension, looses four quick blasts from a graphics ray gun, and then, if you take two steps forward, twitches back into invisibility. It could not feel more satisfyingly *now*.

Visions of technology, just beyond reach

The Media Lab is one of the more eminent research centers around the country that are exploring how computers might improve the relationship of human and machine. One can discover a great diversity of research projects here, with widely varying themes. Using computers to make and display three-dimensional images is one example. Another group is looking at the possible integration of computers with the media we're used to, such as television—designing a TV set that will let you call up more detail about any item appearing on the news. Like these, most of the projects at the lab explore visions of technology that seem tantalizingly possible, but just beyond reach of today's technology.

As intriguing and provocative as each of these projects is, a visitor might well conclude his tour more curious about the box than its contents. The lab has a flash that distinguishes it from other research institutes—a style that suggests an institutional statement, an illustration of a special attitude toward the relationship of society to engineering research, or even to

Symbolic portrait of Media Lab director Nicholas Negroponte is split up amid representative "senses" superimposed on tiled walls of lab where researchers seek ways to make computers "warm and personal."

Photographs by Yoav Levy/Phototake

The Media Lab's Mitchel Resnick plays with a Lego merry-go-round driven by a Logo computer program. The Lego/Logo lab shows school-age children how to write their own programs, thus demonstrating that even child's play can turn into an art of invention.

technology itself. Over time, as the details of the individual projects begin to blur, the memory of the hyperoxygenated atmosphere of the whole remains clear and vivid. More than one visitor has grown to suspect that the Media Lab might prove responsible for no invention more significant than the lab itself.

The acorn from which this oak grew was a research group organized in the late '60s by a young member of the MIT architecture department, Nicholas Negroponte. Initially Negroponte had been concerned with developing computer programs for architects, but soon his interests spread to the larger problem of what he called "the human interface." "The human interface . . . is the physical, sensory, and intellectual space that lies between computers and ourselves," he wrote. "Like any place this space can be unfamiliar, cold, and unwelcoming. But it can also be like some other places, those we know and love, those that are familiar, comfortable, warm, and, most important, personal." He called his team the "Architecture Machine Group," which local usage truncated to "Arch Mac."

An example of Arch Mac's interests was whether our prodigious memory for direction might be adapted to the retrieval of computer data. A person needing aspirin in his cabinet or a paper on his desk or a book in his bookcase usually doesn't read the labels of these items; he just reaches in the right direction. He has associated each "what" with a "where." Data in a computer, by contrast, are usually organized by keywords or by the number of a cell in a matrix. Perhaps, Negroponte speculated, manipulating data in a computer might be more "comfortable, warm, and personal" if they were arranged in a plane or volume and the user given tools to reach for them, as he might reach for files on a desk.

In most universities such a project would be conducted by software engineers or computer scientists, not architects, and the unconventionality of Arch Mac's auspices gave its research a feel that would be unique anywhere, though especially so at MIT. Suppose an ordinary software engineering lab had developed an interest in this concept; suppose further that you had dropped by for a look. You would collar a graduate student, who would hospitably clear a space in the midden pile of Chinese-food cartons, pizza boxes, Coke cans, rock-climbing gear and the other diagnostics of totally serious engineering, and wave you to a seat. "Still a lot of hair on this baby," he might begin happily; "we have these insane incompatibility problems and the data throughput is slow as peanut butter and the memory handling is full of noise . . ."

While you might miss a detail or two, the overall gist would be clear: out there, just beyond the circle of

Fred Hapgood, a Massachusetts-based freelance writer, last contributed to SMITHSONIAN *in November 1987 with an article about research on viruses.*

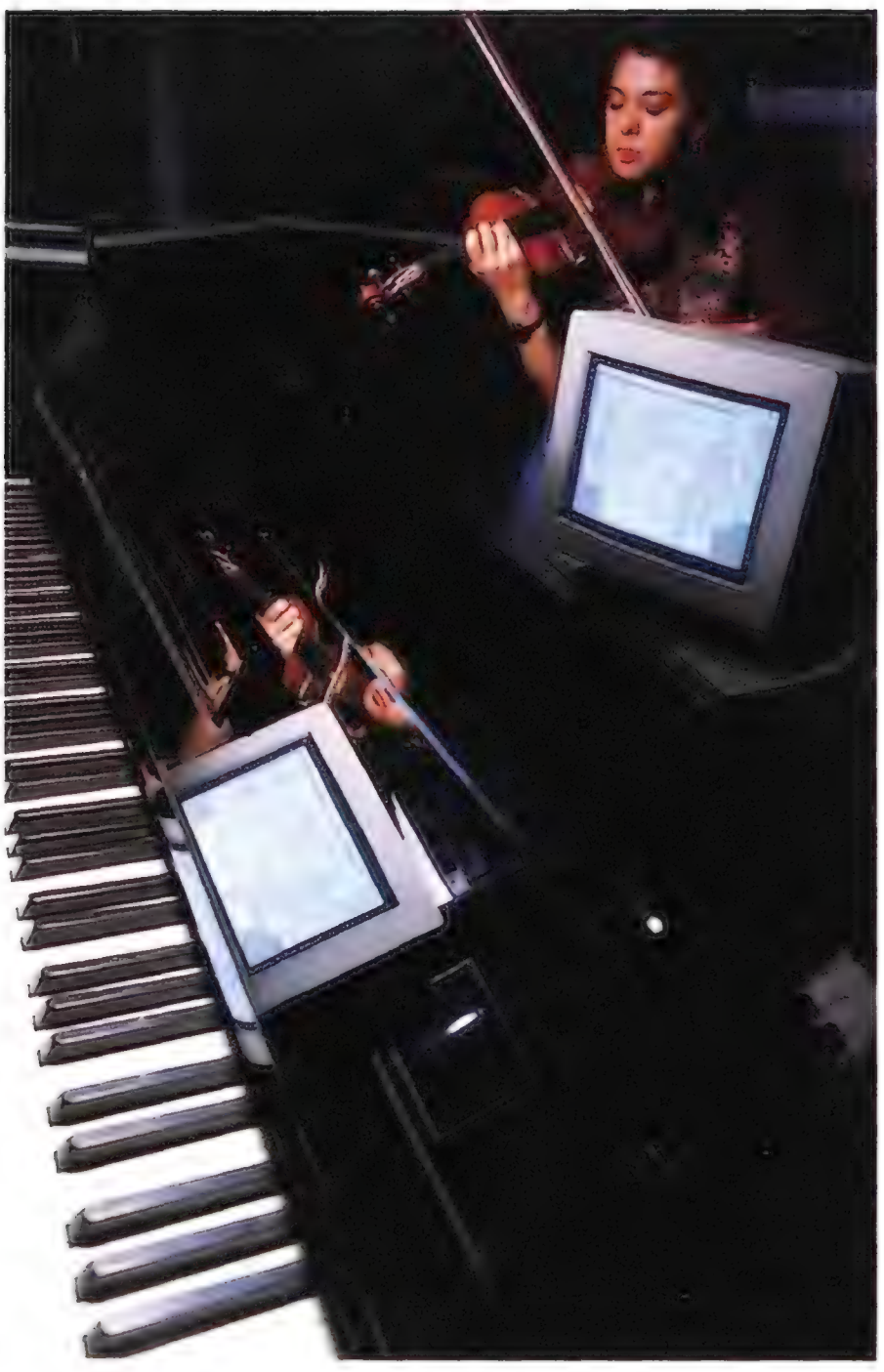
In Human Interface Project, David Koons' headset tracks his eye movements so computer can tell what he's looking at. A "data glove" sends messages to the computer screen as he moves his hand. Composite photo shows "planet" he is moving suspended before his eyes.

firelight, vicious glitch demons were at large, roaming the country, striking at will. The day of total pacification might be years away; predictions would be pointless, and in any case a professional does not tempt fate with idle boasts. At any moment one of the monster terrorist gremlins that ate the controlled fusion and personal helicopter campaigns might appear and join the attack. All a person can do is clear the countryside, yard by yard and hole by hole, and hope.

On the other hand, Arch Mac would have welcomed the same visitor into an elegant office with recessed lighting and rich brown furnishings (except for one wall apparently built of glass), with a spiffy Eames chair in the center. "This is the Media Room," you would be told, "and this . . . [whereupon the wall of glass, 13 feet on the diagonal, would fill with portraits, maps, little display screens, letters, book covers, a calendar] . . . is Dataland!" Two tiny joysticks would appear under your hands; move one to the left, and the symbols on the screen would flow to the right, giving you the visceral impression of steering yourself over a landscape (Negroponte liked to call Dataland an "informational surround"). In seconds you would feel yourself skimming "cities and neighborhoods of information" (less lyrically, clusters of symbols), hovering over fields of faces (each representing a file of correspondence with that person), arrays of book symbols and meadows of maps. Flying around like this, in the Media Lab's vision, will be the future equivalent of sitting down at your office desk.

There was not a whisper here, direct or indirect, about glitches or gremlins or any kind of problem at all; you sat down in the chair and were off, as though you were in a Sharper Image showroom. Yet Dataland was in no sense a real-world, finished product. What appeared to be the wall-size TV display was actually a rear-projection from a room behind the screen, for instance, and no display system requiring that much floor space was remotely practical. Dataland was a "sketch-in-hardware" of how the fruits of this project might look eventually, when all the engineering problems had been solved. "The underlying assumption," Negroponte once wrote, "is that the computer-human interface cannot be . . . studied in baby steps. . . . Instead we postulate an exaggerated statement, not meant to be taken literally, from which we can recede into . . . effective and comfortable modes of interaction."

The idea of conceptual models came naturally to Negroponte, who as an architect had been trained to give blueprint-illiterate clients direct access to the big picture. He made these "exaggerated statements," which he called "demos" and "experimental prototypes," a central element in the life at Arch Mac. (Elsewhere in academe, a local joke went, you had to "publish or perish"; at Arch Mac you had to "demo or die.") In reality, that is, in the back room, or late at



MIT student Joanna Kulik plays violin as computer improvises an accompaniment and plays it on specially wired upright piano. Both musicians are seen here reflected on the polished wooden front of the piano.

night, the same tide of pizza boxes and Coke cans that washed the floors of laboratories everywhere swirled into the Media Room; the gremlins were as elusive and treacherous and mocking, and the action just as uphill and hand-to-hand. The only difference was that in the morning the battlefield was planted with flowers, with all the bugs neatly out of sight.

In the early '80s Negroponte began helping raise funds for a center for the arts at MIT; when the building opened in 1985, he reorganized Arch Mac into a larger operation, the Media Lab, and moved in. The Wiesner Building, named after Jerome Wiesner, a former MIT president, is a boxy, sleek, virtually windowless, four-story affair, covered with a grid of large white metal tiles and sited in the middle of an open space on the eastern edge of the campus. Pulses of color inscribed between the tiles give the structure a flickering, edgy, electronic feeling. The Wiesner breaks conspicuously with the general style of architecture at the school, which favors designs so severe and spare that their very lack of drama becomes a kind of art, symbolizing the triumph of function over frippery. "The squareness of the box and the smoothness of the skin make the building appear self-contained and sealed off from the life of the world around it, like a Christmas present that has yet to be unwrapped," an architect wrote in a review, but to this eye the Wiesner looks less like a Christmas package than a dandy trying to ease his way through the wrong neighborhood.

Negroponte has described the lab's work as the "personalization" of media, in the sense of being individuated or customized. Stewart Brand, technology critic and originator of *The Whole Earth Catalog*, has suggested a second theme: the design of machines that can participate in conversationlike interactions. A third, which struck me, was reducing the psychic effort required to control computers, so that at the extreme the machine vanishes into its function, becoming no more noticeable than the knob you turn to open a door.

A computer that will call a taxi

Representative research projects would include a "desktop secretary" that could negotiate appointments, make reservations, call an airline to check on schedule changes, listen for reports on traffic conditions on the road to the airport, dun subordinates for tardy memos and summon a taxi at the appropriate time; a music synthesizer that can accept a musical score, listen to a human performance and then generate a supporting accompaniment appropriate to the interpretation of that artist; and a display terminal that tracks the user's eyes and can dilate, either graphically or with text, on whichever point of the graphic landscape the user's gaze might linger. (A casual browser skimming a catalog

As composer Tod Machover plays an electric cello, a wired glove analyzes and traces his hand movements on computer screen. When worn by a conductor the "impresario glove" also tracks ensemble's response.

based on this technology would see nothing but images; but the moment one caught his eye the document would begin to extoll the pleasures awaiting those wise enough to purchase the particular item, while rotating the product through attractive perspectives.) There is serious interest here in machine lipreading.

The canonical demo, shown seemingly to everyone, probes the coming marriage of computers and newspapers. At present, news text can be delivered to your computer over a modem. There is no reason why your own computer could not augment the delivered text by pulling maps or background information out of storage on request. The "NewSpeek" demo presents these enhancements not with keyboards or mice but with a touch-sensitive screen—tap the name of a country, and there's the map; run your finger across a summary paragraph and the underlying text floods the display. Again, the demo was not the product; it was not connected to even a tiny fraction of the information a real NewSpeek would be. But it rammed home the idea that a custom newspaper could be controlled lightly, glancingly, almost before the wish becomes conscious.

One possible reaction to these demos is a mild depression that so much energy and intelligence is being focused on functions so far down the list of real human needs. (One exception is a project exploring the teaching of physics and math in elementary schools through the introduction of engineering skills. However, few visitors see these demos, since the test schools are all off campus.) In general, however, most observers are exhilarated. Especially when shown in rapid succession, the demos seem to add up to a whole environment, as if you had stepped out into some mid-21st-century office complex. The impression is that while the other labs have been backtracking through the frustration and confusion endemic to engineering research, the Media Lab has overleaped them all and is closing on Tomorrowland like a hawk on a pigeon.

When the lab opened it was received with intense enthusiasm. The *New York Times Sunday Magazine*

did a story, as did *Time* and *Fortune* and most of the science and technology media. (Both the *Times* and Stewart Brand gave their overviews the sweeping title "Inventing the Future.") An extraordinary range of industrial sectors agreed to underwrite research: financial services, automotive, TV, chemicals, computers, publishing, photography, broadcast, even toys—Lego, of Denmark (SMITHSONIAN, June 1988), is associated with the educational project mentioned above.

From the point of view of the sponsors, this access buys a look at new directions that "media technology" might take. They can get reports, presentations and consultations on issues of interest, receive visiting-scientist privileges and, of course, see all the demos. For many sponsors the payoff could be quite practical. The design departments of General Motors, for example, always interested in new tools for visualizing future models, follow the hologram work very closely. From the lab's point of view, this support buys room and time for the sustained glitch-eradication campaigns most engineering requires, but which the sponsors would find hard to fund in their own organizations. The SPI research is a case in point.

Student Michael Klug "shoots" full-color hologram of a futuristic car, the Wildcat, which appears at left.

When holograms first became popular in the '60s, the technology was generally expected to lead to 3-D television in a few years at most. "Anybody could start up a company with 'Holo-' in the title, make two or three phone calls and get $3 million," the director of SPI, Steve Benton, says. The triumph of the new medium seemed so inevitable that the New York cognoscenti even prepared a hologram museum to receive the new art form.

However, when the engineers assigned to bring the product to market traveled behind the headlines, they found a serious demon waiting. Our stereoscopic brain infers depth from the difference between the angles at which light from a given scene enters our two eyes. These differences are too subtle to be captured easily on a photographic emulsion. The slightest vibration during the exposure—somebody walking down a neighboring corridor, a truck driving by—blurs them out. Even if the light waves falling on the emulsion vary by wavelength (frequency), the information will be jumbled. Holograms can only be "snapped" in rigidly controlled environments with precisely tuned monochromatic laser illumination. These constraints are not compatible with any imaginable version of Phil Donahue's show.

In theory the weaknesses of emulsions could be avoided by using computers to calculate and print the image, like any other computer graphic. Alas, there is a demon on that bridge, too. Unlike ordinary computer graphics, which reach reasonable levels of quality with "only" a million pixels, or dots—the smallest unit of visual information—a hologram of emulsion quality and comparable size can require a trillion dots; further, calculating the proper placement and shading of each dot in a hologram is more complicated, and therefore takes longer, than generating a dot in a 2-D computer graphic.

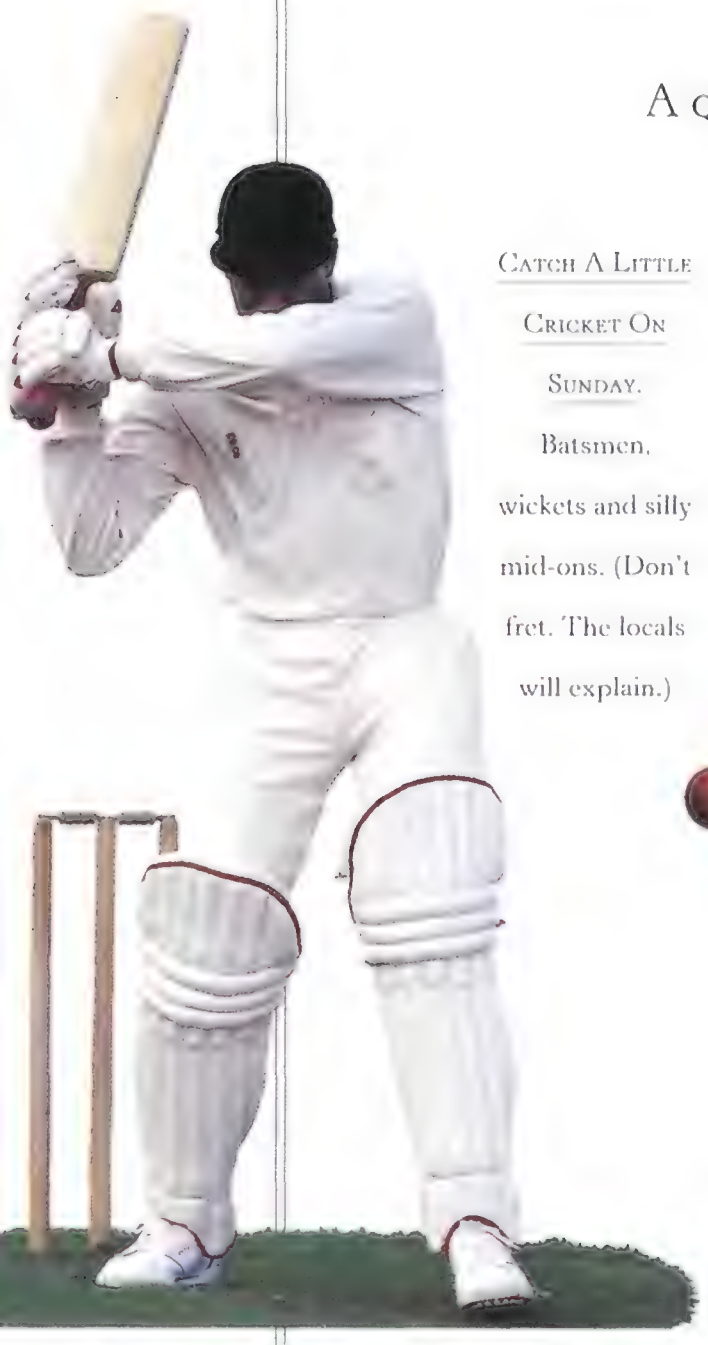
Still chasing holographic dreams

John Underkoffler at SPI calculated this for me more concretely: as of 1990, a top-of-the-line computer would need 30 years to print one emulsion-quality hologram. If you wanted to do a five-minute animation, with 16 images per second, that might take 100,000 years of computer time. When all this was explained to the authorities responsible for allocating R&D dollars, and they understood that holographic snapshots of the Grand Canyon, let alone holographic TV, were considerably more than three fiscal quarters away, they dropped the technology down the hole where all management misfires go. Today the Media Lab is one of the very few research labs (perhaps the only one) still chasing the old dreams.

For many years now (Steve Benton worked at Arch

BERMUDA SHORTS

A QUICK LOOK AT ONE OF THE WORLD'S MOST ENCHANTING PLACES.



CATCH A LITTLE CRICKET ON SUNDAY.

Batsmen, wickets and silly mid-ons. (Don't fret. The locals will explain.)

THE PEACHIEST PLACES ANYWHERE.

We're incredibly tidy. And we're mad for pastel. The combination makes our landscape unforgettable.

WALK ON PINK SAND.

Our beaches come in all sizes. And one truly astonishing color.

Call your travel agent or: 1-800-BERMUDA

BERMUDA. A SHORT TRIP TO THE PERFECT HOLIDAY.

Mixing work and play is serious business in the lab's Terminal Garden, which is open round the clock and is the "gateway" to lab's most powerful computers. As if to emphasize the point, student Joseph Stampleman stops work to take aim at Garden's basketball hoop.

Mac on the same problem) the SPI team has been picking its way through the human spatial-perception system, discarding all information not essential to a convincing 3-D image. We tend to move our heads from side to side, for instance, not up and down, so the holograms here do not work vertically: if you flex your knees or stand on tiptoe in front of the hologram gallery, the objects in the image do not slide over each other. Throwing that information away—telling the computers not to bother to calculate those dots—cuts the calculation time by more than 99 percent. Because the distance between our left and right eyes, the targets of the process, tends to be fairly predictable, holograms don't need to reflect every bit of information in every direction, which emulsion holograms do. Throwing away that information cut the calculation time by more than another 99 percent. Designing a hologram that is visible only to someone standing directly in front of the image saved even more time.

On the other hand, Underkoffler told me, reflections and highlights are critical to depth perception, so that information was kept. The SPI team has discarded so much information that the calculation time for each image is now down to a few days, and members are still paring. Benton is even beginning to see the first glimmering possibilities that extremely rudimentary animated holograms might soon be possible. The team speculates that a hologram graphics printer might allow designers to inspect products in 3-D periodically during the design process, surgeons to interpret x rays and CAT scans directly (without radiologists, who would become obsolete) and architects to give more-polished demonstrations. In the long run the technology could go anywhere—in 20 years three-dimensional imagery might be flowing over the walls and ceilings of our homes.

Whatever happens in that arena, the lab has already made an innovation of another kind: giving engineering ideas the sort of rollout that developers routinely give shopping malls and condominium complexes. Up till now most advanced R&D in the country, certainly at MIT, has been funded by the government; to most businessmen, real cutting-edge research has seemed too unpredictable, too glitch-ridden. Negroponte has put together a research package that businessmen will buy, and in an era of chronic budget deficits and declining military support, anyone interested in the problem of funding engineering research is likely to see the entire lab as a demo in its own right. The model might not be applicable to every kind of research, but "interface engineering," progressively thinning the boundary between psyche and computer, is likely to be one of the core industries of the 21st century. In years to come, engineers may need to learn as much about promotion and marketing as, say, architects do.

Toward the end of my visit I arranged for a demo of "Backseat Driver," a navigation system for automobiles. The engineer on the project, Jim Davis, ex-

A GRAND COLLECTION.

To send a gift of Grand Marnier® Liqueur (except where prohibited by law) call 1-800-243-3787.
Product of France. Made with fine cognac brandy 40% alc/vol (80 proof). ©1989 Carillon Importers, Ltd., Teaneck, NJ.

plained that I was to spell out my destination over a cellular speakerphone to a computer back at the lab. Thereafter the computer would monitor my speed and direction along the Cambridge streets through onboard sensors and, using a speech synthesizer, tell me over the speakerphone which turns to take. Davis then dialed the lab. He dialed it again. A third time. Something was busy. Maybe the computer was down. Several minutes later, though, he connected and was about to punch in our location when the speakerphone broke. This forced him to listen over the headset and relay the machine's instructions verbally.

"Turn here," Davis said. "But I haven't told you where I want to go," I said. "Sometimes it's better to drive to where the computer thinks you are and start from there," he replied. I took a right. "Damn!" Davis said, listening to his headset. "It thinks we're in the river." We drove around and around Kendall Square in the rain, while Jim kept trying to get us in synchrony with the machine. "This is just about the worst demo I've ever had," he said mournfully, rattling away on a laptop with the phone wedged in his ear, swearing at every part and combination of parts in the whole system. He sighed in exasperation and blew out his cheeks and periodically cried out in pain, presumably because the computer had just said something especially stupid.

Finally Jim gave up and we turned to go back to MIT. At that moment the speakerphone suddenly came to life and for the first time I heard the voice of the computer directly. "I thought you were at Albany and Main," it said plaintively. I had a feeling that the device really wanted to work and was just lost, out there in solution space, crawling through glitchland.

Imaginary sparks fly in this photomontage as Media Lab student Michael McKenna plays with his odd pet, a computer-graphic robot cockroach that has had the misfortune of walking into a high-tension power line.

PLANET EARTH
A COMMEMORATIVE EARTH DAY POSTER FROM THE APRIL 1990 SMITHSONIAN

The Poster measures 21¾" x 28¾"
Printed on Recycled Paper
Allow 4 to 6 weeks for delivery

Send $5.00 with address to:
Smithsonian Magazine, P.O. Box 23624,
Washington, D.C. 20026-0624

FORD EXPLORER. BE

You know what's out there.

A big country, filled with miles and miles of highway, miles and miles of look-alike, drive-alike cars.

You also know that just ahead, off the crowded, congested highway, there's another, different world.

It's just waiting to be explored.

FORD DISCOVERED NEW HEIGHTS, DEPTHS, WIDTHS AND LENGTHS.

Compact sport utility vehicles seemed to be your passport to virtually anyplace — from the cabin on the mountaintop to the cafes and shops on the far side of town.

Unfortunately, most of the vehicles didn't give you much room to stretch in, much less explore in.

Little wonder that Ford's engineers and designers were determined to find a new and different route. Because they did, *the wide open space is right here,* inside Explorer.

THE 1991 EXPLORER. DESIGNED FROM THE GROUND UP.

Compact sport utility vehicles were just a little too compact for the people utilizing them.

But, instead of merely "stretching" a 2-door vehicle, the way others have done, Ford designed 4-door Explorer from the ground up.

The key to new spaciousness is as simple as it is ingenious: a longer wheelbase — the longest in its class.

In addition to increasing capacity, this wheelbase can help make a road feel less rough and rocky. Doors are wide for easy entry and exit, a benefit enhanced by a low step-in height.

DISCOVER SOMETHING NEW: MORE ROOM FOR ADVENTURE.

Inside, 6 people* can find something new to explore: room. Headroom, legroom, cargo room. In fact, *4-door Explorer is more spacious than any vehicle in its class.*

And, whenever you get in here to go out there, you can pack all you'll need in Explorer's big, deep cargo space.

Cargo doesn't have to be jammed around the full-size spare tire; it's mounted below the cargo area. (It's out of the way, but easy to get to.)

Whenever you carry long or bulky cargo, just fold down the rear split-bench seats.

The rear access is also versatile; you can open just the window or raise the entire liftgate.

HIND ITS FOUR DOORS,

The 4-door Explorer has been named "Four Wheeler of the Year" by Four Wheeler magazine. Competing against some of the newest vehicles in its class, foreign and domestic, Explorer ranked #1 in on-road ride and drive, exterior styling, and overall interior excellence.

DESIGN: A THOROUGH AND REWARDING EXPLORATION.

Anyone interested in the aerodynamics of motor vehicles will want to look beyond Explorer's sleek and contemporary surface to see *why* it's shaped the way it is. Here, form is beautifully integrated with function.

The limousine-style doors are good-looking, good for entrances and exits. But, because they're curved to meet the roofline, they also help reduce wind resistance. The hidden drip rail system, bumpers and slope of the windshield all contribute to air flow management. The flush-mounted side windows even help reduce noise.

BUILT TO TAKE IT, WHEREVER YOU TAKE IT.

The four-wheel drive Explorer is equipped with Twin-Traction Beam front suspension for independent wheel action.

The frame has ladder-type construction with heavy gauge channel side rails and 5 crossmembers.

P235 OWL all-terrain tires are available.

EXPLORING IN UNEXPECTED COMFORT.

Driving a sport utility vehicle once meant "roughing it." No more. Just explore the options.

In the top-of-the-line Eddie Bauer model, you get power windows, door locks, remote-control mirrors and more. The tilt steering wheel and rear window wiper/washer/defroster are easy to use. A tilt-up open-air roof brings the outdoors in. Options that are easy to love include the Ford JBL audio system and sport bucket seats with leather seating surfaces.

THERE ARE 2-DOOR EXPLORERS AND 4-DOOR EXPLORERS.

When some of you explore, you want the whole gang along. Plus, gear enough for a gang.

Others prefer to travel alone, without a lot of baggage.

Whichever model is right for you, keep in mind: *The 4-door Explorer is not a "stretched" 2-door. The 2-door captures the spacious feeling of the 4-door.*

If you seldom encounter conditions that call for 4-wheel drive, 2-wheel drive only models are available.

*4-door model with optional front bench seat.

THERE'S A BIG NEW WO

RLD TO DISCOVER.

EXPLORE NEW ROADS AT THE TOUCH OF A BUTTON.

With all other 4x4 compact utility vehicles, shifting to 4WD means struggling with a clumsy floor-mounted shift that uses up almost as much passenger room as it does elbow

grease.

Explorer has Ford's exclusive Touch Drive system. With one push of a dash-mounted button, you shift from 2- to 4-wheel drive high, and back again, on the fly.

DISCOVER REAL POWER.

The powerful and energetic engine is Ford's multi-port fuel-injected 4.0L V-6. It's controlled by Ford's EEC-IV computer which continuously "fine tunes" the engine by controlling the fuel-air mix and adjusting the spark timing.

Power front disc brakes are standard, as is the rear anti-lock brake system.

When properly equipped, *4-door Explorer can tow 5,300 lbs.* That's real pulling power.

TO EXPLORE IN CONFIDENCE: THE 6/60 POWERTRAIN WARRANTY.

Covers you and future owners, with no transfer fee on major powertrain components for 6 years/60,000 miles. Ask to see a copy of this limited warranty at your Ford Dealer.

At Ford, "Quality is Job 1." You'll see ample evidence of that when you encounter the 1991 Explorer.

If you know what's out there, you know that nothing else measures up.

BEST-BUILT AMERICAN CARS AND TRUCKS.

The best-built American cars and trucks are built by Ford Motor Company. This is based on an average of consumer-reported problems in a series of surveys of all Ford and competitive '81-'89 models designed and built in North America.

EXPLORER

Ford

Have you driven a Ford . . . lately?

BECAUSE WE KNOW WHAT'S OUT THERE, YOU'LL FIND MORE IN HERE.

INTRODUCING EXPLORER.

Ford

Opposite: By 1950, when Italian father and sons were photographed by Alfred Eisenstaedt, few immigrants came through Ellis Island. But in 1905, ferries (above) waited to transport the thousands processed daily.

By Thomas A. Bass

A new life begins for the island of hope and tears

Ellis Island prepares to reopen its doors as a national museum, and offers up a moving trove of photographs from past and present

The pictures, some old, some recent, tell the story: it was like dying and trying to enter heaven, except that Saint Peter had been replaced by an examiner from the Bureau of Immigration, and the angels had given way to Marine Hospital Service doctors armed with pieces of chalk. Filing into an enormous room devoted to the registering of souls, suppliants were marked with a revelatory code. Those who were branded with symbols such as *E*, *H*, *Pg*, *X* or *X* with a circle around it would then be plucked from line and held for further examination.

This alphabet of obstacles translated into *E* for eye diseases, *H* for heart problems, *Pg* for pregnancy, *X* for mental retardation, and *X* with a circle around it for insanity—all potentially excludable conditions. The initial "six-second medical" administered by doctors watching applicants walk upstairs had already weeded out the lame and the halt. Judgment was swift!

Often at the rate of one person every two minutes, those deemed to be of sound mind and body would step up to a desk for their final examination. What is your name? (Not an obvious question! Did a newcomer

After passing physical exams and answering endless questions, a group of immigrants, dressed in their best, walked to the ferry that would take them to New Jersey or Manhattan. There, they were at last free.

tell the inspector that the name written on the ship's manifest lying in front of him was missing half its syllables? Probably not.) Who paid for your passage? *I did!* How much money do you have? *Twenty-five dollars!* Do you have a job in America? (Another tricky question. The correct answer was no. Contract laborers were excluded, but so too was anyone likely to become a "public charge.") More questions kept coming. Are you a polygamist, an anarchist? *No! Never! Not me!*

The list of categories for exclusion grew longer every year. Beginning in 1875 with Chinese laborers, it mushroomed to include lunatics and idiots, those suffering from "loathsome" diseases, like tuberculosis; favus, a scalp fungus; and trachoma, an eye disease that often resulted in blindness. By 1917, barriers had been put up against 33 classes of people, including alcoholics, prostitutes, pimps and the illiterate.

But no matter how many tricky questions and exclusions they faced, an ever-increasing number of people crossed the Atlantic to knock on America's gate. In 1892, the year Ellis Island opened as an immigration station, nearly half a million people passed through the Port of New York. Fifteen years later, the number had jumped to more than a million a year. In 1907, on one record day 11,747 immigrants were processed through Ellis Island. "We were simply swamped by that human tide," said an interpreter on the inspection line. "This ranging and guiding and hurrying and sifting," observed a British immigrant fresh out of steerage, "was like nothing so much as the screening of coal in a great breaker tower."

During the flood-tide years from 1900 to 1914, a massive outpouring of Italians, Greeks, Romanians, Poles, Russians—many of them Jews fleeing pogroms—abandoned their farms and villages in Southern and Eastern Europe. Leaving behind poverty and oppression, they were the westward cargo for steamship companies. Ellis Island was staffed by hundreds of officials and interpreters who spoke 30 languages among them, but even this was at times inadequate to the Babel of tongues washing over the island.

Robert Louis Stevenson said that only the failures left home. Others claimed the opposite: the immigrants were the strongest, most adventuresome of the lot. But in the 1920s, when quotas were placed on the number of people admitted to the United States, nativist sentiment would succeed in ending one of the great migrations in modern history.

A brief flurry of arrivals at Ellis Island preceded our entry into World War II, and another flurry, including displaced persons, followed it, but because of the quota laws and the fact that the processing of

Thomas Bass has written several articles for this magazine, and his book Camping with the Prince and Other Tales of Science in Africa *is just out.*

immigrants was now done abroad, fewer came through Ellis. By the time the island was closed in 1954, it had spent about half its institutional life as a detention center for enemy aliens and for those whose papers were not in order, and as a deportation center for Wobblies, Reds, anarchists and other suspect radicals.

Still, the fact remains that 12 million of the 16 million immigrants who entered New York Harbor between 1892 and 1954 traversed what came to be known as the "Isle of Tears." (Up until the mid-'20s most first- and second-class passengers were spared the indignity of being "processed" at Ellis Island; they disembarked directly onto the piers of Manhattan.)

Many families had terrible experiences

"Ellis Island was a very contradictory place, full of tears and sorrow," my aunt, Katherine Bachenheimer, told me when I asked her about my family's experience on the island. "People were pushed around a lot, their names changed, families separated. If you write about it, promise me you'll tell this side of the story along with all the successes."

As many as 2 percent of all the people who walked up the steps at Ellis Island were denied entry and were deported, while some of those admitted probably later wished that they had never left home. Katherine's mother, for example—my paternal grandmother—would die young of tuberculosis and galloping consumption in a Lower East Side tenement. Hers was not one of the success stories that can be found among the estimated 100 million or so Americans—40 percent of the population—who trace their ancestry through Ellis Island.

When Klaus Schnitzer took his photography class at Montclair State College in New Jersey to Ellis Island in 1982, this self-contained island world was in utter ruin. Three thousand people at a time had once been housed here, sometimes for weeks on end. Their graffiti, like the verses written in Greek—"When your fate is to pass from here, you will pass"; their triple-tiered bunks; their dinner plates, which had served up endless portions of soups and sandwiches; and even the dust of people's footprints could still be found, but these traces of its former life were obscured under shards of broken glass and the rubble of collapsing roofs.

Schnitzer told his students to focus not on whether Ellis Island "should be remembered as a symbol of hope or disappointment, but on the deeper mysteries of memory and the passage of time." They succeeded brilliantly, and the operation expanded into a broader photo-documentation project that included a number of professional photographers. Schnitzer and Brian Feeney, his former student who now serves as the National Park Service photographer on Ellis Island, have assembled an exhibition of historic and contemporary photographs to mark the reopening of the immigration center as a national museum.

Before the buildings were in ruins the immigrants themselves inspired photographers. Lewis Hine and Alfred Eisenstaedt accumulated a wealth of scenes documenting the excitement, anxiety, boredom and confusion involved in the passage across Ellis Island.

The stage on which many of these photographic dramas are played is the island's Main Building, the palatial red-brick structure that architectural historian Robert Twombly describes as having been "designed to intimidate while it inspired." After a $160 million restoration—a project touted to be as grand as the refurbishing of Versailles or the Hermitage—this American immigrant palace will be the centerpiece of the new Ellis Island Immigration Museum. When its exhibitions are fully installed later this year, it will be one of New York's largest museums. The number of visitors per day is expected to exceed the daily average for immigrants "processed" on the island during the peak years. The old baggage room, offices and processing rooms will be adapted for museum galleries. There will be an oral history center and a library.

Restored to the way it looked from 1918 to 1929, the Registry Room will be left empty. It will serve without commentary as its own memorial. Bathed in light from arched windows overlooking the skyscrapers of Manhattan, yet shadowed with the memories of all the souls it once held, this vaulted chamber is still giving strong, even if ambiguous, instruction in the meaning of social justice in America.

Files that contain stray papers left behind when Ellis Island was closed remained untouched in 1988.

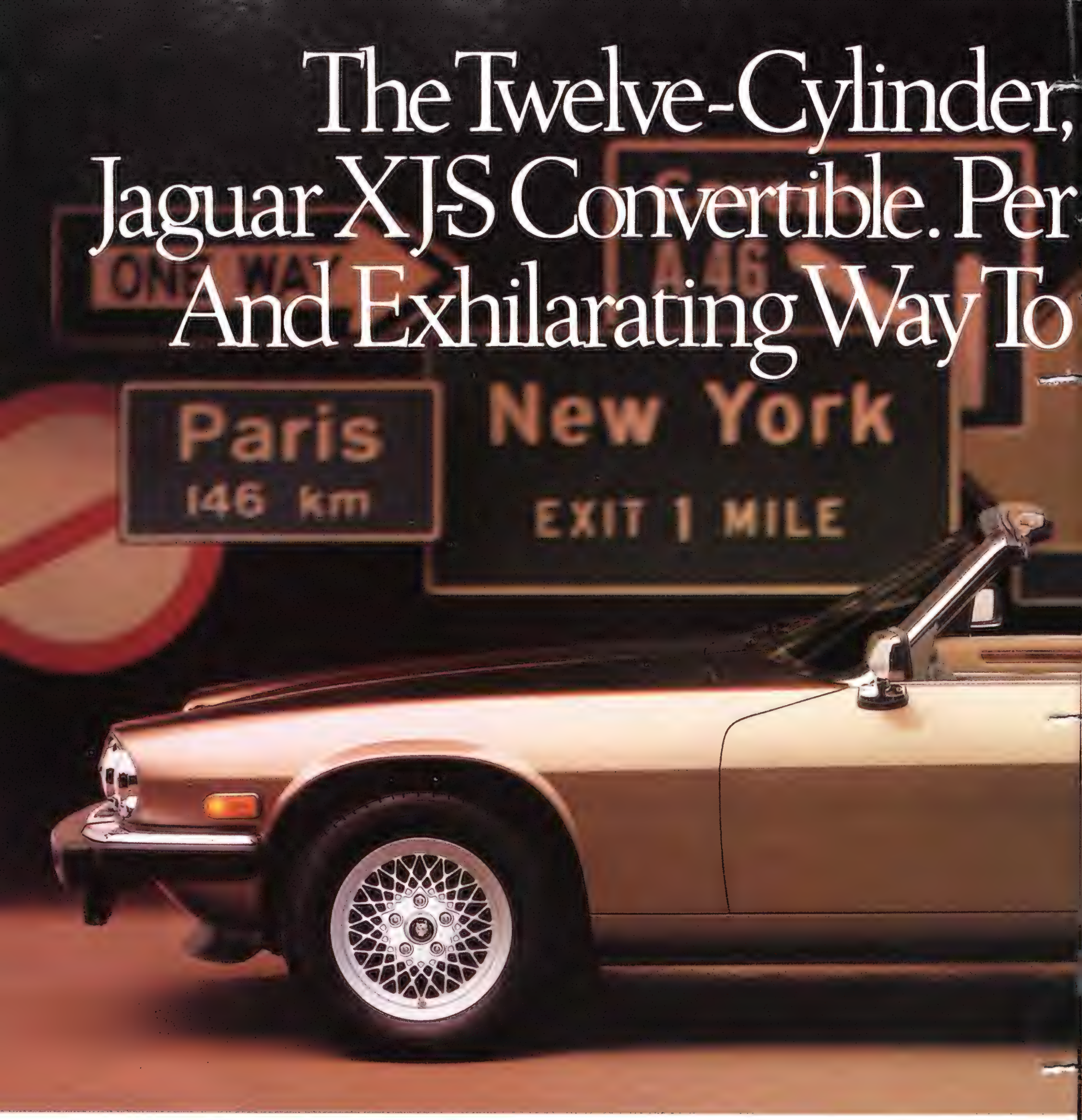
The Registry Room, or "great hall of judgment," had deteriorated after decades of neglect when photographed in 1983 (center). Nearly 12 million immigrants, waiting hours in lines and going from one examination to the next, passed through here. In 1911, benches replaced iron railings so the weary could rest. The young woman (above) was detained in the same room in 1950, possibly for political reasons. Alfred Eisenstaedt captured her as she waited, along with others, for her name to be called. Lewis Hine was struck by the faces of newly arrived immigrants and made a number of portraits. The Czechoslovakian grandmother (right) went through Ellis Island in 1926; the man, an Armenian Jew, left Turkey after the Armenian massacre of 1915. In the 1980s, when photographers documented Ellis Island (opposite) they found some remnants of those years—hospital beds and sinks left just as they once were.

Dining room (top) was set to feed 1,200 people with diverse food tastes. Around 1910 the immigrants were given soups and meat, boiled vegetables and fruits; a separate kosher kitchen was maintained for the Jews.

Memories of the past, these items (above and left) were uncovered by photographers and were included in collages; kitchen equipment (opposite) that was used to prepare thousands of meals forms a still life.

Marked with chalked *X* (top) for possible mental retardation, immigrant men await eye exam, and perhaps deportation. The group at left came from Eastern Europe in the 1920s and made it through the system; now they live in Queens. Seen today, Manhattan skyline (opposite) forms backdrop for Ellis Island as restoration work continues.

The Twelve-Cylinder, Jaguar XJ-S Convertible. Per And Exhilarating Way To



While there are any number of ways to get where you're going, we think getting there should be an exhilarating experience. That is precisely why we created the XJ-S Convertible.

The S-type Convertible offers the kind of exhilaration that made Jaguar famous. A velvety smooth, powerful V-12 engine provides authoritative acceleration. Modified for racing, this engine powered Jaguar to a one-two victory at the grueling 24 Hours of Daytona this year.

Jaguar's renowned independent suspension system and four-wheel ABS anti-lock disc brakes make driving the S-type through the twists and turns of challenging roads a joyous experience.

At the press of a button, the S-type's top folds down in less than 12 seconds to reveal a sunny day or a

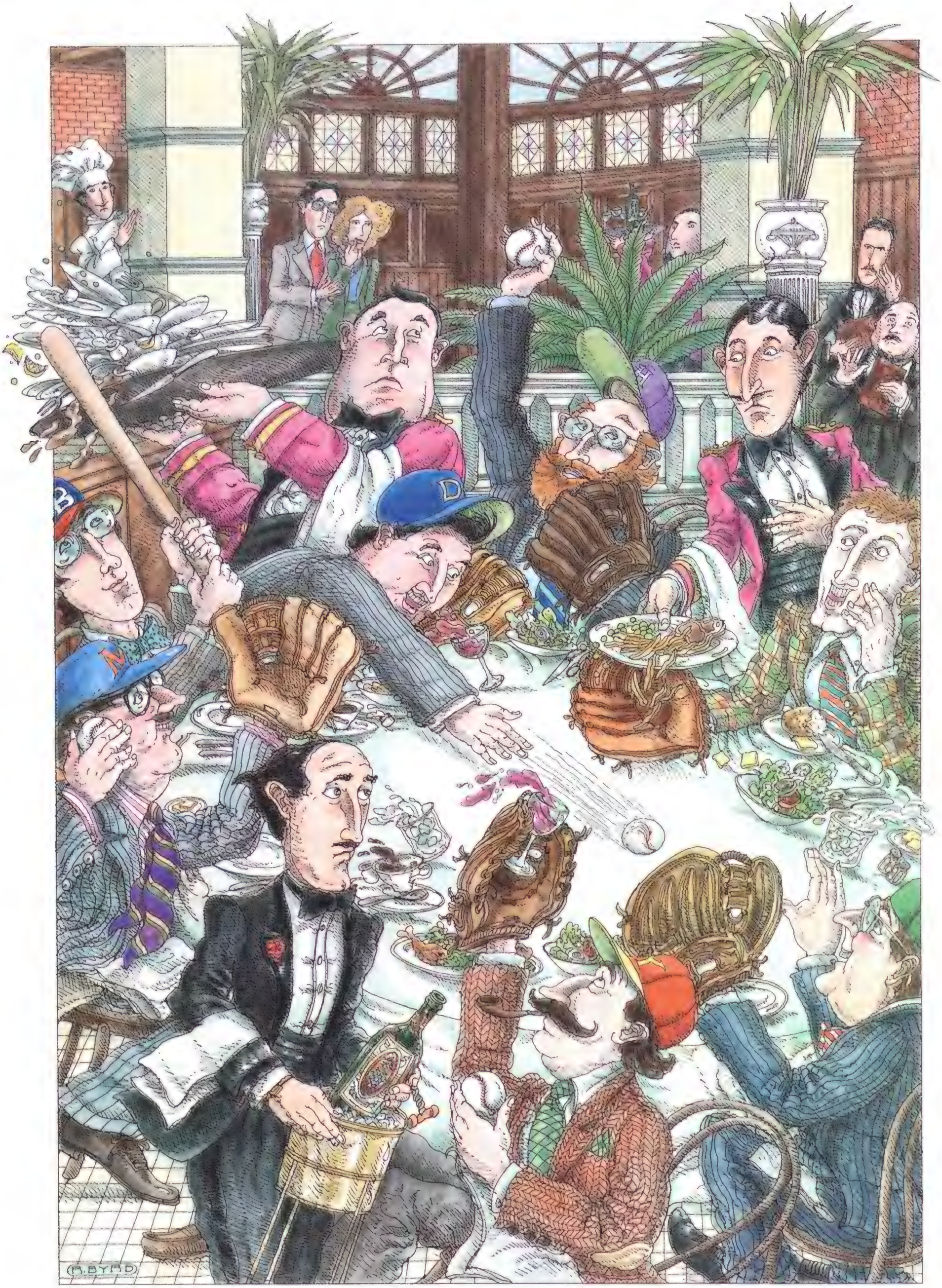
A B L E N D I N G O F A R T A N D

263-Horsepower haps The Most Luxurious Get From Here To There.

moonlit evening. Close the thickly padded, hand-tailored top and the cabin becomes a quiet, luxurious space for you and your passenger. The doors, dash and console are adorned with highly polished, burl walnut. Extensive use of leather throughout the interior assures comfort, while a host of amenities, such as an 80-watt stereo sound system, cruise control and computerized climate control, add enjoyment and convenience. You'll also appreciate classic touches, such as deep-pile carpeting, embossed doorsills and thickly chromed brightwork that proudly reflects the beauty of the surrounding wood.

Test drive the 1990 Jaguar XJ-S Convertible. For your nearest dealer call 1-800-4-JAGUAR. One ride in an XJ-S Convertible and you'll learn how the drive itself can be a rich reward.

MACHINE JAGUAR


R.BYRD

By Nathan Cobb

Rotiss: the greatest game for baseball fans since baseball

The Rotisserie League lets you do what you always knew you could—run a team better than the people who actually do it for a living

Perhaps you know me. Perhaps you are the trucker who was drinking midnight coffee late in April 1989 in Moody's in Waldoboro, Maine, listening with drooping eyelids as I waffled over placing Oakland Athletics designated hitter Dave Parker and his .194 batting average on my reserve roster. Perhaps you are the woman on Piedmont Airlines flight No. 1841 in late July, your smile frozen on your face from Newark to Baltimore as I debated aloud whether or not I should trade Kansas City Royals pitcher Bret Saberhagen despite his ten wins and 2.81 earned run average. Perhaps you are the young couple who sat next to me in Boston's Fenway Park in early June as I stood, alone among 33,584 souls, screeching wildly while Toronto Blue Jays outfielder Junior Felix raced around the bases to complete an inside-the-park grand slam home run against the hometown Red Sox. I screamed as Felix slid headfirst across home plate: "He's mine, mine, mine!" In retrospect, I'm not surprised you changed your seats.

If you do not know me, you know someone like me. In America in 1990 it is almost impossible *not* to know somebody who has more or less given up family, friends and responsibility to participate in Rotisserie League Baseball, aka Rotiss, aka Ro-ball, aka the Greatest Game for Baseball Fans Since Baseball. Few people any longer assume that Rotisserie League Baseball must be some kind of cooking competition. If they do not know the details of the game—and there is no shortage of details of the game to know—they at least know that it involves folks like me "owning" teams made up of real major league players and competing with like-afflicted individuals via the cumulative statistics of these players as compiled in actual games.

And outsiders probably know that players can be traded among "owners" within a given league; that they can be banished to or beckoned from reserve rosters; and that their performances are loudly cheered, cussed, applauded, damned, praised, denounced, admired and wept over. But what RLB really does is allow baseball fans to do what they always knew deep down in their heart of hearts that they could do: run a team better than the people who actually do it for a living.

There are eight categories of RLB stats. For hitters: batting average, home runs, runs batted in and stolen bases. For pitchers: wins, saves, earned run average and the wonderfully arcane hits-plus-walks-per-inning ratio. Standings are calculated weekly, with teams ranked according to performance in each category: 12 points for first place (in a 12-team league), 11 for second and so on. Thus, a perfect score is 96 (8 times 12), while the ultimate in futility is 8 (8 times 1). Some leagues calculate their own standings, but most rely on one of the many computer-based statistical services that have sprung up within the RLB universe.

It's really Moriarty League Baseball

Rotisserie League Baseball remains the first and foremost type of "fantasy" baseball in which participants create their own teams, although several knockoffs have surfaced. (For better or worse, there are now even fantasy football and fantasy basketball leagues.) RLB was born during the 1979-80 off-season when a small cadre of like-thinking New Yorkers, most of whom worked in publishing, met at La Rotisserie Française, an East Side restaurant now defunct. Let history note, however, that the concept was formalized by the same group a few months later at another bygone Manhattan eatery, P. J. Moriarty. Thus, tens of thousands of Americans are really playing Moriarty League Baseball.

Daniel Okrent of the tiny town of Worthington, Massachusetts (pop. 1,150), holds the RLB title of Beloved Founder and Former Commissioner-for-Life. A 31-year-old freelance writer and editor at the time, he is generally credited with having had the Frankensteinian idea that grew into RLB. He still plays the game, although much in the manner that the Cleveland Indians play real baseball: in ten years, he has never finished higher than third place.

"RLB was born in the 1979-80 off-season when a small cadre of New Yorkers met at La Rotisserie Française."

Illustrations by Robert Byrd

Rotisserie Baseball's fantasizing fans

"The chocolate-flavored drink endorsed by Yogi Berra is poured over winner's head in Yoo-Hoo Ceremony."

In 1986 Okrent and the other original Rotisserians trademarked the Rotisserie name, but they have profited little from their idea. Their Rotisserie League Baseball Association Inc. publishes a newsletter, provides a stat service for leagues, organizes an annual "convention" at baseball's spring training sites, peddles T-shirts and generally serves as RLB's quasi-official voice. It has one full-time employee, but the Beloved Founder remains irrevocably linked. "I'm convinced," he says, "that if I bring about world peace and find a cure for cancer, the headline on my obituary will still be 'Okrent Dies—Invented Rotisserie.' "

I had managed to steer clear of all this for nearly a decade. For more than 30 years I had devoted myself to the Boston Red Sox, an exercise in masochism that only a New Englander—or a Chicago Cubs fan—can understand. This marriage ended on the evening of October 25, 1986, when, while seated in New York's Shea Stadium, I watched a lazy ground ball off the bat of Mets outfielder Mookie Wilson meander through the legs of Sox first baseman Bill Buckner, with two outs in the bottom of the tenth inning of the sixth game of the World Series. This horrifying yet predictable act ended a game in which the Red Sox, who a few moments earlier had held a two-run lead with no Mets on base, were one out away from winning the Series for the first time since 1918. The fact that they lost the seventh and final game two nights later was of no consequence to me. That fateful ground ball had forever terminated my relationship with the team. To this day I do not care if the Red Sox win, lose or move to Dubuque.

A rookie season of despair, hope and resignation

The divorce, however, left a void in my life. I was still following major league baseball, but in a desultory fashion. I needed to get involved with the game again, but dispassionately. Thus, in the autumn of 1988, I surrendered and joined the tens of thousands of hopeless number-crunchers who have been overcome with RLB. I became co-owner of the Danzig Bears in the League of Nations, a 12-team Rotisserie league based in the Connecticut River Valley of western Massachusetts, about 90 miles west of my home in Boston. It is a collection of kindred souls much like, say, Ft. Worth's Cowtown League or Detroit's Michigan Baseball Confederacy. Last year was my rookie season in the league, a six-month odyssey of despair, hope, and finally, resignation—not to mention 7 player trades, 21 other roster moves, 964 miles of driving to and from league gatherings and $208.63 in long-distance telephone charges.

I realized the League of Nations was my kind of outfit when seven brands of beer were served at its annual fall owners' meeting. While some leagues are little more than gambling operations whose stakes run into

What makes a child seat safe is how an adult uses it.

Make sure the harness isn't fastened too loosely.
Make sure the harness is fastened over the child's shoulders.
Make sure you have a seat appropriate to the weight of the child.
Make sure the car's safety belt is routed through the seat correctly. In this case, it goes through the back of the seat.
Make sure the seat faces in the proper direction.
Make sure your seat has labels certifying that it meets federal safety standards.

One-third of all child seats aren't used correctly. It's one reason traffic accidents are the leading cause of death in children. To change that, double check your child's seat. Read all instructions and follow them carefully.

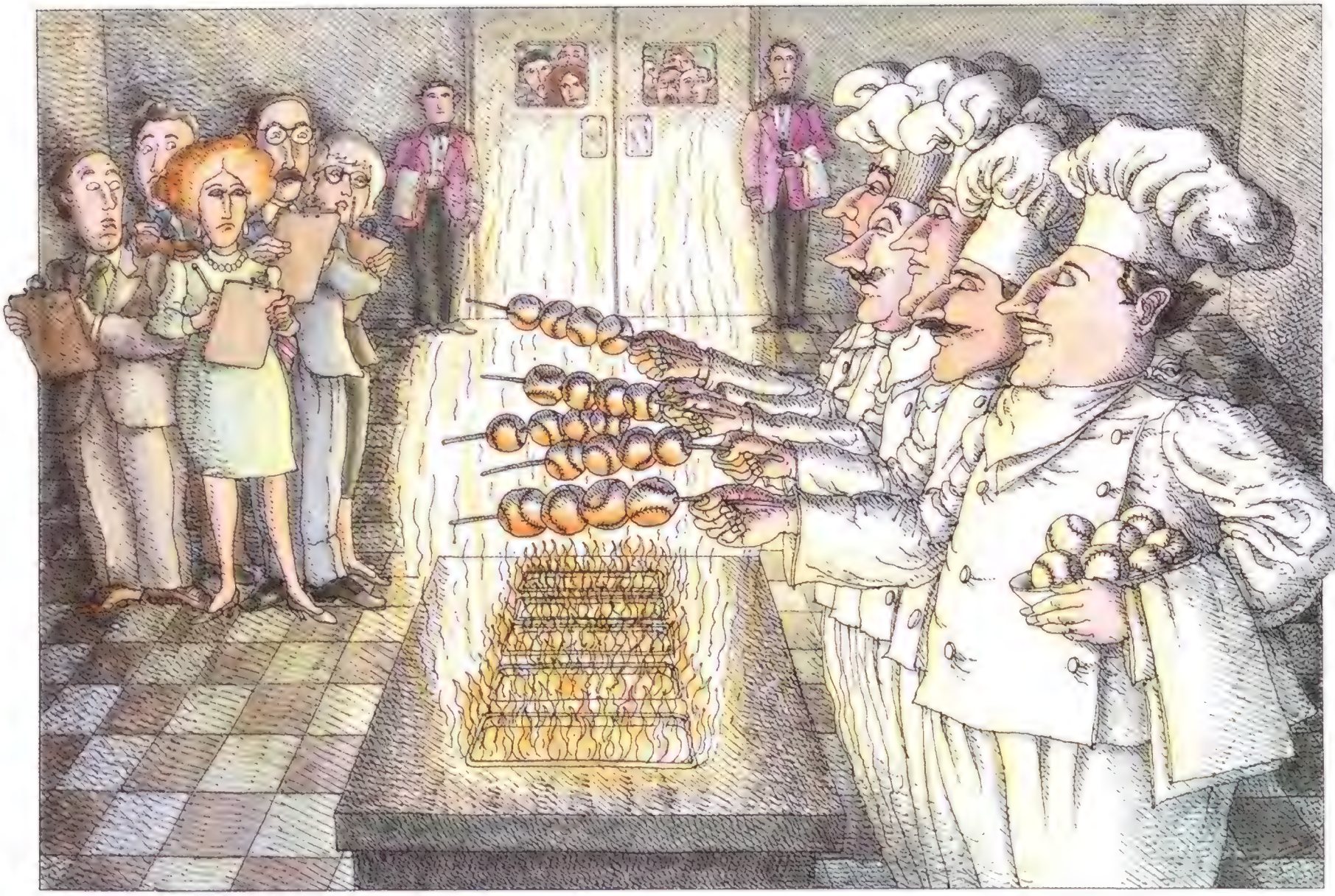
Allstate championed child seats long before they became law in all fifty states. Through our "Buckle Up Baby" program, we offer infant seats to employees when their children are born. That's because a child seat improves a kid's chance of surviving an accident by 70% if used correctly.

For a free booklet by the American Academy of Pediatrics and a discount coupon from Sears on child seats, write to: Allstate, Dept. 500, P.O. Box 7600, Mt. Prospect, IL 60056-9961.

As adults, it's our job to make sure child seats are used right all the time.

A member of the Sears Financial Network

Allstate®
You're in good hands.



"Few people any longer assume that Rotisserie League Baseball is some kind of cooking competition. They at least know that it involves folks 'owning' teams of real players and competing via statistics."

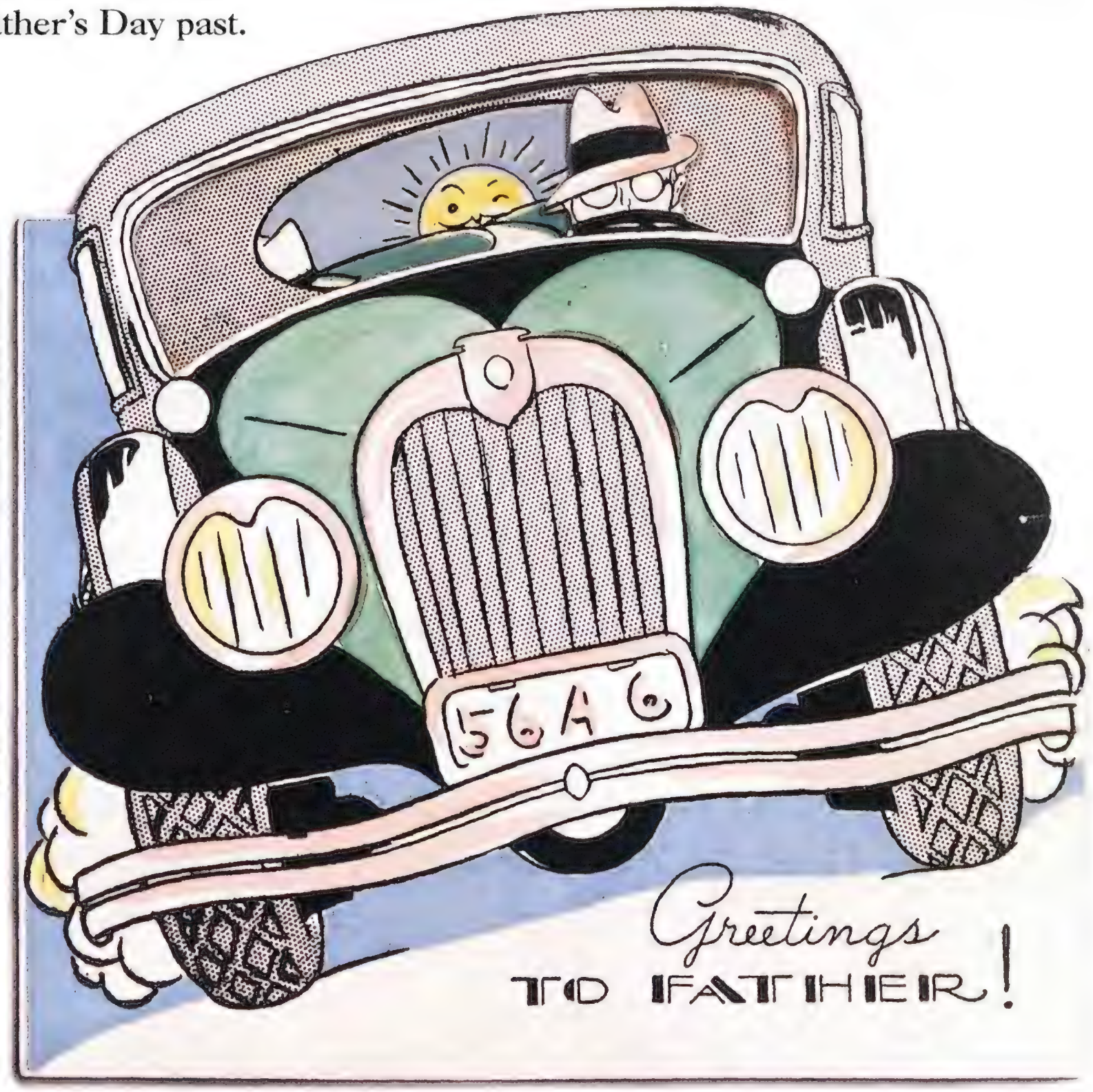
the thousands of dollars, the League of Nations is strictly for low rollers. All leagues collect fees from their owners for players who are "bought" at an annual April draft, as well as for a variety of moves such as trades and call-ups from reserve rosters, and the booty goes to the first four finishers at the end of the season. "Official" rules—often modified by individual leagues—state that each team can spend a maximum of $260 for players at the draft. The League of Nations limit is $46. Explains Anthony Lake, full-time professor of international relations, part-time farmer and co-owner of the Smuts Peddlers, a team known for its refusal to own anyone who plays for the New York Yankees: "There should never be more at stake than the cost of one spring calf." Personally, I like this sensible approach. On the other hand, I am sorely disappointed that the League of Nations does not stage an annual Yoo-Hoo Ceremony (Article XX of the Official Constitution of Rotisserie League Baseball), wherein a bottle of the chocolate-flavored drink once endorsed by Yogi Berra is poured over the head of the pennant winner.

As Danzig Bears co-owner, Nathan Cobb of the Boston Globe *has yet to be doused with Yoo-Hoo. He wrote on the magician Marco,* SMITHSONIAN, *November 1981.*

Still, like RLB itself, the League of Nations is partly an elaborate joke. Twelve of its 25 owners—two are women—who range in age from 13 to 57, are college professors, which explains why teams in the league have taken their names from real League of Nations history. (The city of Danzig, for example, was under the protection of the League during the early 1920s. Jan Smuts, South Africa's prime minister from 1919 to 1924,. was a staunch supporter of the organization.) And although one shouldn't overlook former scatter-arm fireballer Stephen Philbrick, now a farmer and poet, who pitched in college and whose primary job as a Peddlers co-owner is to scout scatter-arm fireballers, authentic baseball experience is practically nonexistent within the league.

The League of Nations is best exemplified by the fact that, when basketball trophies were erroneously delivered to its 1988 awards banquet, nobody cared. Yet, I was mercilessly grilled on my qualifications for ownership. Question: How many box scores are you willing to read each day in order to get the same results you've already gotten in two different newspaper stories, even though you were watching those games on TV the night before? Answer: You can never read too many box scores. Accepted!

Father's Day past.



Greeting card, 1934. Used with permission

Father's Day present.

WHAT ARE YOU SAVING
THE CHIVAS FOR?

Visit your local retailer, or call 1-800-238-4373 to send a gift of Chivas anywhere in the U.S. Void where prohibited.

"The League of Nations is best exemplified by this fact: when basketball trophies were erroneously delivered to its 1988 awards banquet, nobody cared. Still, I was mercilessly grilled on my qualifications for ownership: 'How many box scores are you willing to read a day?' "

Most Rotisserie teams are partnerships. My partner in the Bears front office is Stephen Kulik, an easy-going administrator at the University of Massachusetts at Amherst, who is also a selectman in the town of Worthington, coincidentally the home of the Beloved Founder. Luckily, these two endeavors do not infringe upon Kulik's RLB time. "The preparation he does for the annual draft is certainly more than he does for anything else, including the town budget," points out his wife, Suzanne. Although one often hears tales of RLB causing domestic disharmony and even divorce, the Kuliks have reached an accord worthy of the original League of Nations itself. "Here's the deal," says Suzanne. "Stephen can talk about it as much as he wants, but I don't have to listen."

The Bears had finished in eighth place in 1988, the year before I joined the team's managerial ranks. Kulik, just like any real-life baseball executive, blamed this mediocre performance partly on injuries. "We can only do better," he murmured as we hunkered down inside T. D. Smith's Diner in Springfield for a mid-winter strategy session. Under RLB rules, we would be allowed to begin the 1989 season with as many as 15 holdover players, the remainder for our 23-man squad of 9 pitchers, 6 infielders, 5 outfielders, 2 catchers and 1 designated hitter to be acquired at the April draft. But this didn't preclude us from bolstering our roster through preseason trades. Trades are the heartbeat of RLB, a more-or-less-adult extension of swapping baseball cards. We would soon recall the baseball execs (or was it a kid hoarding a wad of baseball cards?) who say the best trades are the ones you don't make.

I immediately entered the fray. After spending several evenings identifying what I thought were underpriced pitchers—RLB teams have a salary cap, with a player's "salary" being the amount for which he was "purchased" in the April draft—I decided I couldn't live without Cecilio Guante, a Texas Rangers relief pitcher who had won only 21 games and saved 33 more in seven major league seasons but was clearly destined for better things. Besides, his salary was a mere 35 cents. The Sun-Yat Senators were willing to part with him in exchange for Craig Worthington, a Baltimore Orioles rookie third baseman whose salary was $2. We'd be saving $1.65 in wages and getting the next Dennis Eckersley at the same time! Who cared that Worthington is a great fielder and had been selected the most valuable player in the International League for 1988? Being able to catch the ball doesn't count in RLB, right? Besides, everybody knew that Worthington wouldn't be able to hit major league pitching. The deal done, Craig Worthington went on to hit major league pitching so well in 1989 (15 HRs, 70 RBIs) that it seemed like he must have been batting against Cecilio Guante (6 wins, 2 saves) half the time. Guante was so bad he was released by Texas at the end of the season.

We knew none of this, however, when the League of Nations convened around a large table in the Geology Department of Amherst College on Draft Day, April 8, 1989. Outdoors, normal people frolicked in the sun. Indoors, abnormal people brooded over piles of statistics. "Trader Jack" Cheney of the feared Hammerin' Sickles, a geology professor, was, as usual, contemplating the acquisition of a roster heavily laden with Latin American players. Lake of the Smuts Peddlers was again using computer-generated data to predict players' performances during the upcoming season. Clark Dougan, a writer-editor whose Manchurian Candidates had won the pennant the season before, was looking forward to another year of listening to split bands

SHEAFFER®

from high atop a hill in the hamlet of Pelham. (Split bands are radio frequencies on which two adjoining stations can be heard simultaneously if the listener is in the right place at the right time. This means you can monitor, say, a Tigers-Red Sox game via WJR in Detroit while listening to a Yankees-White Sox game on WABC out of New York on the same radio. To Rotisserians seeking to learn how their players are performing, two games are infinitely better than one.)

But the Bears were ready, too. A cottage publishing industry has sprung up around RLB, and I had carefully studied most of the obscure tip sheets, detailed newsletters and single-minded magazines that clutter the market. Although some Rotisserie leagues are "mixed," most consist entirely of American League *or* National League players. The League of Nations uses only American League players. Among the things I knew to be unalterably true for 1989 was that Teddy Higuera, a Mexican-born ace of the Milwaukee Brewers pitching staff, was going to return from off-season back surgery to become, as usual, a stellar performer in the American League. Everyone said so. Thus did I find myself bidding an astronomical—by League of Nations standards—$6.60 for Higuera's services. No matter. He would anchor a team that included:

- Chicago White Sox relief ace Bobby Thigpen, who had set a team record with 34 saves the previous season. Almost every successful RLB team has at least one pitcher with 30 or more saves;
- White Sox catcher Carlton Fisk, statistically the best American League catcher. Getting good stats from a catcher is like getting an unexpected tax refund;
- Rangers second baseman Julio Franco, a consistent .300 hitter. In RLB, where fielding doesn't count, infielders are a lot like catchers: you hope they won't leave you sleepless with their batting—or lack thereof. Owning one who hits like Franco is a bonus;
- Blue Jays outfielder George Bell, drafted by the Bears at a reasonable price—$5.60—because other teams figured he had peaked two years earlier when he was selected the American League's most valuable player. A possible bargain;
- Royals starting pitcher Bret Saberhagen, an ex-Bear who returned to the den. Dropped by the Bears after the 1988 season because he seemed overpriced at his previous $5.55 salary, he was redrafted by us at $4.90 in the Draft Day bidding. In stark contrast was his $1.5 million actual contract.

The Bears front office was confident. Besides, my work as a newspaper reporter gave me computer access to breaking wire-service stories, all the better to acquire early information so necessary for trading. I had my obligatory subscriptions to *Baseball America* magazine for minor league scouting, and to *USA Today* for daily statistics and box scores. I had cable TV, which brought me ESPN, NESN, CNN and the rest of the video alphabet soup of games and updates. I had been given fair warning that RLB would forever alter my perception of the gospel according to the box score, that I would now be interested in the performances of major league *players* rather than major league *teams*. I may have been a rookie, but I had prepared for the 1989 season like a veteran.

What I had not prepared for was being in last place. But there it was, just four weeks into the season, revealed in the eight-page computer printout that the League of Nations owners receive every Thursday from Heath Research of Virginia Beach, Virginia. (Heath, one of the most successful of RLB stat suppliers, serviced 177 leagues and grossed approximately

"We bolstered our roster through preseason trades—the heartbeat of RLB—a more-or-less-adult extension of swapping baseball cards. We soon recalled baseball execs (or a kid hoarding a wad of baseball cards?) who claim that the best trades are the ones you don't make."

You're looking at a 2900% blowup with detail never before possible in a 35mm color print film.

Kodak presents EKTAR color print film for the advanced photographer.

EKTAR 25 film delivers microfine grain for the most superior image structure; the highest resolution; the sharpest detail ever achieved in color print film.

EKTAR film.

The genius is in the details.

Photograph taken on EKTAR 25 ISO film.
Available in 25, 125, 1000 ISO.
For more information on EKTAR film, call: 1-800-242-2424.

Kodak

"There should never be more at stake than the cost of one spring calf. I like this sensible approach."

$125,000 last year.) The Bears were in the cellar! With only 28 points! "We've *never* been in last place before, not once in five years," moaned Kulik in a tone of voice that suggested that if RLB had had provisions for trading co-owners, I would have been gone. While the Bears could not hit, neither could they pitch. In no single statistical category did we rank higher than eighth in the league. Fisk had a broken hand. Higuera was still recovering from back surgery and hadn't pitched at all. Duane Ward of the Blue Jays, a mainstay of our bull pen, lost six games in the first month of the season, practically a statistical impossibility for a relief pitcher. These events may have troubled the White Sox, Brewers and Blue Jays respectively, but collectively they devastated the Danzig Bears.

I had more to learn. At 8:57 P.M. EST on April 29, I sat in my darkened living room and watched on TV as Franco hit a two-run home run off Wes Gardner of the Red Sox. I was stunned. Franco was a Bear. Gardner was a Bear. How was I to react? It was, like the season ahead, a frustrating mixture of joy and despair.

May The Bears wormed their way into tenth place with 44 points, 29.5 points out of first place. In four appearances, the costly Higuera won no games, acquired a stiff back and sprained an ankle. The Bears sent him a get-well card. Desperate for pitching, we celebrated Memorial Day by sending hard-hitting White Sox outfielder Ivan Calderon to the first-place-but-slumping Smuts Peddlers in exchange for Scott Bankhead, a promising young pitcher for the Seattle Mariners. "I like the guy," co-owner Kulik said of him, though he had only two wins and a lackluster 4.67 earned run average so far. As the man who would become notorious for having faith in Cecilio Guante, who was I to argue?

Ecstasy, despondency—and Rolaids

June The Bears streaked to fifth place with 55.5 points, 28 points out of first place. We passed the Bosnian Bombers, St. Petersburg Monarchs, Easter Uprising, Manchurian Candidates and Sun-Yat Senators. Giddiness reigned in our clubhouse. When Saberhagen didn't pitch for ten days, and the wire services failed to report the reason, I anxiously called the Royals front office and pretended to represent a group of concerned citizens from the pitcher's hometown in Illinois. I explained that we wanted to attend one of his games but weren't sure when he would pitch again. A polite woman said not to worry, that Saberhagen merely had a stiff right shoulder and would pitch the next day, which he did, striking out seven batters in six innings. And on one of many scouting trips to Fenway Park, I watched Junior Felix, our rookie Blue Jays outfielder, drive in 11 runs in three games. On the other hand, I listened in horror to WABC out of New York as Orioles rookie pitcher Bob Milacki, who moonlights as a Bear, was denied a win over the Yankees when a fly ball disappeared in the fog in the ninth inning. This is the essence of RLB: ecstasy one day, despondency the next. In other league news, the Hammerin' Sickles took over first place from the slipping Peddlers. The Sickles' Trader Jack was too nervous to listen to games on the radio or watch them on TV. "I can't afford the Rolaids," he murmured.

July The Bears moved up to fourth place, then slipped back to fifth with 58.5 points, 22.5 points out of first place. The League of Nations Annual Mid-Season Picnic and Wiffleball Game took place on Tony Lake's farm. "Don't invest in me," muttered Trader Jack, even as the Hammerin' Sickles led the league by 13 points. Despite his name, the Trader had made no deals since opening day. Unbelievably, he asked us about the availability of Higuera. Even more unbelievably, we were not interested in trading Our Teddy. This is

When we are very young, we are possessors of a splendid gift: a mind that knows no limits.

Faced with a new experience, it allows us to make discoveries, gain insights – and, with time, learn something more of the world around us.

And, if we're truly fortunate, we'll never completely let go of the early innocence that keeps us forever open to new ideas.

That's why, since 1976, we've funded and provided free-loan educational films to schools, to awaken a young person's imaginative spirit.

Already millions of students have seen "American Enterprise," an exciting profile of U.S. economic history; "The Search for Solutions" on science and problem solving; and "The Challenge of the Unknown," covering mathematics, all in an entertaining and involving way.

Because it's our desire to help young people realize that the only real limits to learning are the ones we make for ourselves.

PHILLIPS PETROLEUM COMPANY PHILLIPS 66

To learn how your local school can obtain these films, write to: Educational Films, Phillips Petroleum Company, 16C-4PB, Bartlesville, Oklahoma 74004.

because RLB owners operate under three axioms: 1) If I drafted him or traded for him he must be good; 2) If he's playing poorly it's only for a while; 3) If I trade him he'll become the next Jim Palmer or the next Willie Mays. Just then we were operating under Axiom No. 2 because Higuera had won three games in July and had a respectable 3.25 earned run average for the month. As for the legendary Junior Felix, he ran into an outfield fence, thereby separating his shoulder. The Bears made a note to send him a card.

August The Bears languished in fifth place with 59.5 points, 23.5 points out of first place. Here was the essence of Rotisserie craziness: we lost shortstop Dick Schofield of the California Angels for several weeks when he was hit in the hand by a pitch thrown by Scott Bankhead. Both are Bears. Meanwhile, a couple of Bears were acting like hockey players: Red Sox pitcher Wes Gardner was arrested on an assault charge, while George Bell was suspended for two games for arguing with an umpire. Off the field, Tony Lake stunned us by resigning as general manager of the Smuts Peddlers, claiming he needed a rest because of creeping sanity: "Little things are happening. For instance, I found myself caring about who was winning real games, rather than just studying individual performances. And one day I actually read the front page of the newspaper before the sports page. I need time to get insane again." The Bears made a note to send him a card.

September The Bears were tied for fourth place with 61 points, 18.5 points out of first place. All hopes of a pennant dashed, the team's owners tried to hold ground. "Who cares about money?" asked Kulik. "It's the glory." In a final, futile gesture, the Bears recalled Sam Horn from their reserve roster. Horn was a gigantic Red Sox first baseman who responded to the call-up by raising his batting average from .128 to .148, among the worst in the American League. The Bears' other Red Sox player, Gardner, was hit in the face by a ground ball and had his season mercifully ended before his 5.97 earned run average could go higher. But Saberhagen won his 23d game, Bell drove in his 104th run, Bankhead had 11 wins against only 2 losses since becoming a Bear, and Franco's batting average was a nifty .316. And Teddy? Higuera, now with a strained shoulder and a virus, finished with 9 wins, a 3.46 earned run average and an American League record for most ailments by a left-handed pitcher in a single season.

October 1 The Bears finished in . . . sixth place with 59 points, 18.5 points out of first place. (In related news, the Hammerin' Sickles held off the fast-charging Yalta Boys by 2.5 points to win the 1989 League of Nations flag.) For the Bears, the end was bitter. Franco, the team's hitting star and owner of 92 runs batted in, pulled a muscle in his lower back and missed the final week of the season. Thigpen, who had 33 saves through September 24, got only one more in the final week. These two seemingly small setbacks, unnoticed amid the flotsam and jetsam of world events, were disastrous. If the Bears had gotten just one more RBI for the season (732 instead of 731) and one more save (52 instead of 51), the team would have tied for fourth place with the Smuts Peddlers, i.e., *in the money.* Heath Research cruelly calculated where all teams in the league would have finished if no trades or roster moves had been made after the April draft. Bad news, Bears: had we not painstakingly engineered 28 roster changes, we would have finished in third place.

A few days after the season ended, the League of Nations owners gathered around a large table laden not with hot dogs but with Caribbean food. This time the top four finishers actually received *baseball* trophies, or would have if the prizes had been delivered on time. There was no Yoo-Hoo, either. Also absent was Trader Jack, who had won all of $341.01 for capturing the pennant. Even as he remained at home with a sick child ("The only thing that would have kept me away"), the Trader was already viewing the 1990 season with unbridled, unabashed and unremitting cynicism. "All I see are sore arms and blown knees," he grumbled.

Today, as the Danzig Bears play another season on the fields of fantasy, I raise my eyes to the heavens and, drawing on Simon and Garfunkel, pose a question to the ages: Where have you gone, Cecilio Guante?

Actually, my query is not rhetorical. I know the answer. Guante has gone to the Cleveland Indians, where he is earning $650,000 for the 1990 season. Which is $649,999.65 more than his salary as a Danzig Bear.

"Cable TV brings me ESPN, NESN, CNN and the rest of the video alphabet soup of games and updates."

TBS
JKL
KLM
PQR
CB
TCB
XYZ
RST
UVW
IJK
EFG
ESPN

THE ACURA LEGEND. ONE OF THE FEW LUXURIES IN LIFE WHERE THE PAYMENTS WON'T OUTLAST THE ENJOYMENT.

Everybody loves a new car.

New cars look good. They feel good. New cars even smell good. But the true test of a luxury performance car is how you feel about it a few miles down the road. When the chances of discovering something new and exciting about the car aren't nearly as great as the chances of discovering a handful of loose change between the seats. When the honeymoon is over...that's when you'll discover the real difference between ordinary luxury cars and the Acura Legend.

The Legend grows on you. Its available leather seats fit to your body, its 24-valve V-6 engine revs more and more freely as more and more miles roll up on the odometer, its controls are placed

*©1989 Acura Division of American Honda Motor Co., Inc. Acura, Legend are trademarks of Honda Motor Co., Ltd. *1987, 1988 & 1989 J.D. Power and Associates Customer Satisfaction Index" with product quality and dealer service.*

so thoughtfully that, in time, you'll find yourself not simply driving the car, but interacting with it.

Perhaps that's why, for an incredible third year in a row, Acura automobiles were ranked the most satisfying in America in the prestigious J.D. Power and Associates Customer Satisfaction Index.** In the areas of product quality and overall dealer service.

So, as you shop for your next new car, we'd like you to do three things. Enjoy the new car feel. Enjoy the new car smell. And remember that Acura owners are still enjoying their cars long after both have worn off.

For more information or the nearest dealer, call 1-800-TO-ACURA.

ACURA

Precision crafted performance.

By Stanley Meisler

People thought this great church was never to be finished

At Washington National Cathedral, after 83 years of work, plans are set to celebrate its completion—a triumph of faith and reason

A light rain pattered on the 10,000 people who had crowded onto Mount St. Alban, one of the highest hills in the nation's capital, on September 29, 1907. They were there to applaud Bishop Henry Yates Satterlee as he began construction of the Cathedral Church of St. Peter and St. Paul, known as Washington National Cathedral, by striking the foundation stone with an ivory-and-gold mallet once used by George Washington.

They had come for the festivities on foot and in horse-drawn carriages, commercial wagons, new luxury automobiles and the electric trolleys that hummed along Wisconsin Avenue in those days. A few umbrellas sprouted over the heads of the crowd, but most onlookers preferred to brave the rain. President Theodore Roosevelt, accompanied by his wife and two of their children, arrived just before the noon ceremony by carriage from the White House, three miles away. The President made a brief speech, wishing the Episcopal bishop and his followers "Godspeed in the work begun this noon." Great cathedrals have taken many decades, even centuries, to complete, and no one expected this one to go up with dispatch. Bishop Satterlee warned the onlookers, "Nobody here will live to see the completion of this cathedral."

But the good bishop was mistaken. Exactly 83 years later, on September 29 of this year, at least a half-dozen of the children in that historic first crowd will occupy seats of honor as the final stone is placed on top of Washington National Cathedral, which looks loftily down on the busy hub of government a few miles

Out of chaos, humankind: west portal tympanum in Indiana limestone deals with the theme of Creation.

It took sculptor Frederick Hart four years to create the bas relief, which is 24 feet wide by 18 feet high.

Photographs by Robert Llewellyn

On Mount St. Alban, one of Washington's highest hills, the cathedral rises toward its finish on west end.

away in central Washington. The setting of that piece will mark the last act in the drama of a monumental church built in the medieval manner—the sixth-largest cathedral in area in the world, with a nave that climbs almost as high as that of Notre Dame in Paris.

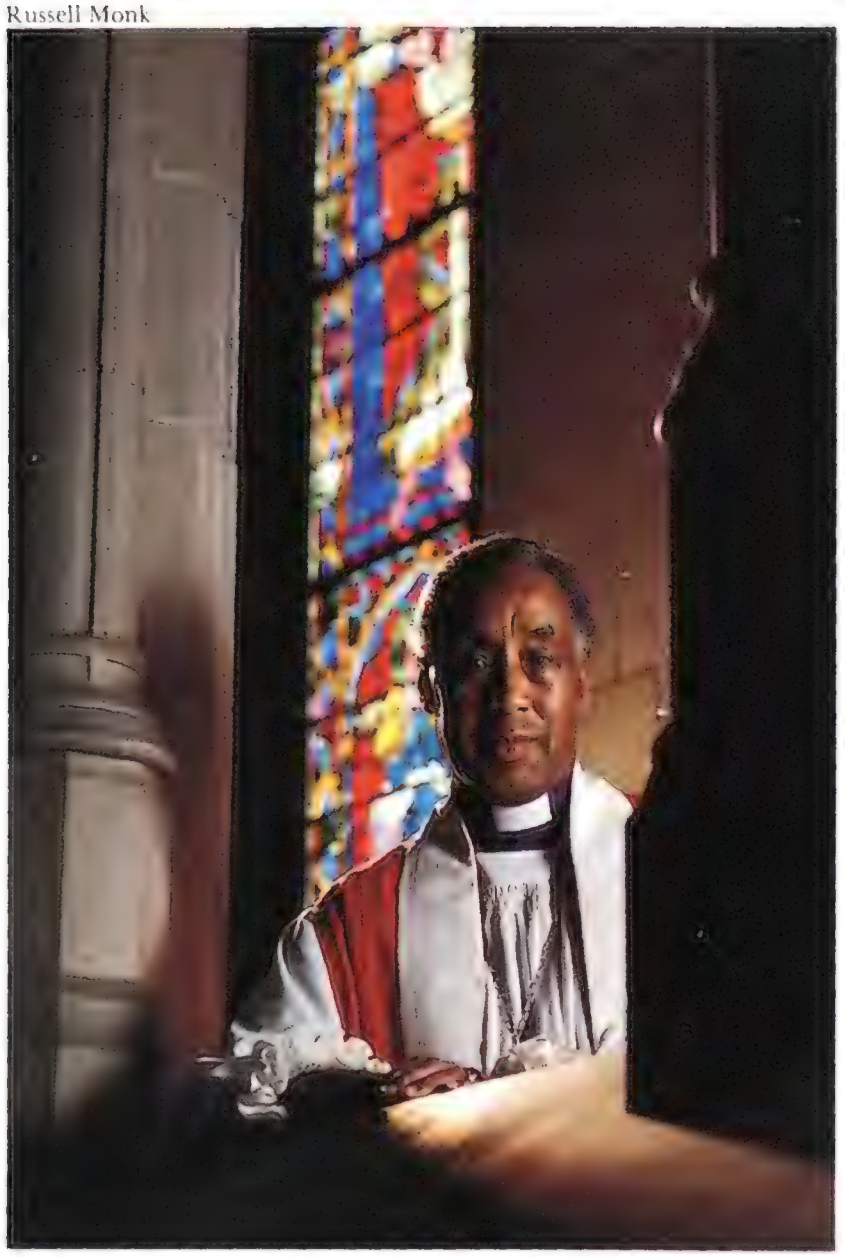
There have been moments when many people believed not only that the good bishop Satterlee was right but that the cathedral might never be completed. Soon after the Bicentennial of the American Revolution, in fact, all construction stopped for lack of funds. The project was in so much debt that it seemed foolhardy to talk about anything except paying off creditors. "I'm one of those who thought then that it would never get finished," admits Canon Richard T. Feller, who as Clerk of the Works has supervised construction of the cathedral for 37 years. If construction were delayed even as little as five years, Canon Feller believed, the few stonemasons and carvers, members of a highly skilled and dwindling craft, would leave Washington for other projects throughout the world and find it difficult to move back. But a tireless campaign amassed enough funds by 1980 to resume construction. The masons and carvers were recalled, and Feller now plans to retire on September 30, the day after the grand ceremony.

Envisioned: "a great church for national purposes"

Although the cathedral is only now near completion, it has functioned as a church since 1912, when the Bethlehem Chapel was opened in the crypt level. Church officials like to boast that their cathedral fulfills the vision set down by Pierre L'Enfant, the French architect who designed the city of Washington and included "a great church for national purposes" in his plans. But no church, of course, has such standing under the American constitutional separation of church and state. Washington Cathedral receives no federal money and plays no official role in government. Yet it is surely one of the best-known churches in the country. President Woodrow Wilson is buried there; so are author Helen Keller and wartime Secretary of State Cordell Hull. Funeral services for President Dwight D. Eisenhower and the Inaugural prayers for both Presidents Ronald Reagan and George Bush were offered there. Martin Luther King jr. preached his last Sunday sermon in the cathedral a few days before his assassination.

In a sense, there is something anachronistic about the completion of this Gothic cathedral near the turn of the 21st century. Gothic is a style developed in the Middle Ages, revived in the 19th century, and shunned by modern architects of this century. For years, critics would belittle the architecture of the cathedral as a dead end, a waste of time and money, and urge the

Russell Monk



The late Bishop John Walker led cathedral to near-completion and opened it to wider needs of the times.

Suffragan Bishop Ronald Haines stands at south portal. He became Acting Bishop after Walker died.

bishops and deans to abandon the Gothic for a more modern style. "Gothic became so out of style that it was ridiculed," says Canon Feller. But the builders clung stubbornly to their vision and finally saw acceptance of the style once again.

Washington National Cathedral is a great edifice of towers, flying buttresses and gargoyles outside, and awesome columns, enormous ribs and high vaulting inside. The entire massive structure, like medieval cathedrals of old, is built of stone—in this case, Indiana limestone—without any steel to hold it up. Its main tower, crowded with bells, reaches so high—300 feet—that a lucky visitor can see the great skyline of Washington and what were once Civil War campgrounds in Maryland and Virginia. On sunlit days, light streaming in through intricate stained-glass windows dapples the walls and columns and bays with color.

But cathedrals are made up of far more than their masonry and art. They comprise many worlds. This was driven home to me on two brief occasions earlier this year. On a chilling, wintry night, hundreds of music lovers filled the pews of the nave and transepts, which meet at the crossing in front of the choir. They listened to players of the recorder, the lute, the psaltery

and other medieval instruments, along with a quartet of singers, perform religious music of the 12th and 13th centuries in a celebration of the "splendor of the Gothic cathedral."

A cathedral is not an ideal concert hall. This one is so enormous that the musicians and singers seemed far off in the distance. Some of the listeners may have been having trouble with the music, for medieval music is subtle, elusive and, to a few, perhaps boring. Yet the moments at this concert were charged with awe. My gaze was pulled away from the distant performers by the massive columns and ribbing that soared ever upward to meet in beautiful vaulting on the ceiling far above. The music lofted gently upward with the curve and climb of the ribbing. The sense of majesty and mystery offered a glimpse of how a medieval worshiper once experienced the Gothic cathedral.

My second insight came on a gray morning a couple of days later—Martin Luther King's birthday. The canons of the cathedral began a weeklong vigil, "Prayer Over Washington," against the scourge of drugs. A few people, some kneeling, listened to an Episcopal priest in a white cassock lead prayers in the Bethlehem Chapel. "May those whose health and freedom have been lost to addiction find strength and support to overcome their weakness," the priest intoned. Washington, the nation's capital, is riven with crime and drugs and poverty. Despite the medieval mood of the architecture and stained-glass windows, a visitor to the crypt chapel now came face-to-face with a shame and terror of the late 20th century.

When a group of prominent Episcopal laymen received a charter from Congress in 1893 to form a foundation to build the cathedral, they were not sure what it should look like. At first, they favored a classic Renaissance style. By 1906, this design still had an important advocate in Daniel H. Burnham of Chicago, one of the most-prominent architects in the United States. But the majority agreed with Bishop Satterlee that only the Gothic style would fit their idea of a cathedral. The foundation then hired George Frederick Bodley, the most-renowned Gothic-style architect of Britain, and English-born Henry Vaughan of Boston to design a cathedral resembling some of the best-known Gothic churches in England.

The modern architect Le Corbusier once called medieval cathedrals "acts of optimism," and it is true that Gothic cathedrals came out of an optimistic era when rich burghers from prosperous towns in France decided to subsidize great religious works. For the glory of God, they wanted enormous buildings that soared to

During 21 years overseas for the Los Angeles Times, *journalist Stanley Meisler became an aficionado of Western Europe's Gothic cathedrals.*

Dramatic view of wall of apse (in center) shows Gothic flying buttresses and freestanding buttresses.

With such structures supporting vaulted ceilings, walls could be opened up for stained-glass windows.

Gothic Bethlehem Chapel, which is in the cathedral's crypt level, has been in continuous use since 1912.

Hand-carved ornate bosses lock together the ribbed vaulting; the cathedral has more than 600 of them.

dizzying heights and glowed inside with the light of the sun. The flying buttress—an architectural invention of the Middle Ages—allowed them to have both. Instead of the walls of the cathedral supporting the vaulted ceilings above the floor of the nave, graceful stone arches carried the thrust of the vaulting to solid structures of masonry outside. With these buttresses supporting the height of the cathedral, the walls could be opened for stained-glass windows that admitted an incredible play of filtered sunlight inside.

A widespread disdain for the Gothic

During the Renaissance, critics disparaged these cathedrals and came up with the term "Gothic" to describe them. They proclaimed that the art of the Middle Ages was so monstrous that it surely must have been created by the Goths; in short, by barbarians. This disdain lasted until the 19th century, when people became enamored with the height, light and sculpted decoration of the Gothic style.

Three men—architect Philip Hubert Frohman, who enhanced the Gothic mood while modifying the designs; Dean Francis B. Sayre jr., who powered the longest continual stretch of construction; and Bishop John T. Walker, who led the church into the life and turmoil of the city—are probably more responsible than any others for the image that people have of the majestic cathedral on the eve of its completion.

Frohman was a 27-year-old California architect when he first visited the Bethlehem Chapel in 1914. He was so awed by it that he came back several times. He even wrote a wish into the visitors book—in private code—that he might someday serve as architect of the future cathedral. Cathedral officials, in fact, would soon be looking for a new architect. Bodley had died in 1907, and Vaughan died in 1917.

In 1921, Frohman's secret wish was fulfilled when his firm was hired to take over as architects of the cathedral; Frohman worked as the cathedral's main architect until he retired 50 years later. His contribution was crucial. He made important modifications in the original Bodley and Vaughan designs for the west front, enlarging the large rose window. Even more crucial, he made the cathedral soar upward in the French manner. In the end, although the cathedral would remain fundamentally English with its central tower and pinnacles, as Bodley and Vaughan had planned, it would include French elements that added grace and beauty.

In the view of Canon Feller, Frohman, much like the deeply religious architects of medieval times, had the uncanny ability to feel the full Gothic unity of his cathedral as he worked. Feller recalls Frohman coming into his office one day in the late 1950s when the Clerk

Stylized pinnacles adorn the steeply pitched roof of the apse (above). At right, Canon Richard Feller, who has directed building of the cathedral for 37 years, stands among musical angels of west tower pinnacle.

of the Works was young and new. "Mr. Feller," the architect said sternly, "I understand you to have said that I was an anachronism. Would you please explain that to me?"

The agitation of the great architect shocked Feller. He tried to explain. "Mr. Frohman, you understand and feel clearly the true Gothic style. I think of your work as Frohman Gothic. You are not copying from a textbook. You had no one to teach you. But you had it in you. That is what I mean by calling you an anachronism." The architect calmed down, and the two men would work together harmoniously for another 20 years.

A young priest, Francis B. Sayre jr., born in the White House when his grandfather Woodrow Wilson was President, was named dean—the chief clergyman and administrator—of the cathedral in 1951. Construction of the building had been slowed during the Great Depression and was halted from 1942 to 1948. When Dean Sayre took over, his cathedral was made up of only the apse (the polygonal end that includes the high altar and the reredos space behind it), the choir, the columns of the crossing, and the north transept. Since this cathedral, like most, had been designed in the shape of a cross, the new dean's church could be described as possessing the top and one arm of the cross but not the other arm or the main bar—the nave. And it still had none of its three towers.

Dean Sayre proved himself a tireless builder and an influential presence in Washington, often in the news, often speaking out on public issues. The Very Rev. Charles A. Perry, who now administers the cathedral as provost, describes Sayre as "brilliant, poetic, patrician . . . one who often took stands on things that were not popular," pointing out that the dean was one of the first to work on behalf of the Palestinians. Under Dean Sayre, the central tower with its pealing bells and carillon went up over the crossing, the 218-foot-long nave was extended and finished, and the west facade of the main entrance was started. By the time of the Bicentennial celebrations in 1976, all but the west facade and the two west towers had been completed.

But the rush of construction in time for the Bicentennial had left the cathedral with a crushing debt of $10.7 million. Although Dean Sayre still wanted to forge ahead, Bishop William F. Creighton decided that the financial plight had grown too precarious. As Canon Feller has written, at a meeting of the Chapter (the cathedral's governing board) in December 1976, "the cold winds turned into a gale and . . . the bishop was forced to lay a heavy hand on his good friend and colleague, the dean." Bishop Creighton took control of the financing and, after a year, called for an indefinite halt to construction.

Witnesses insist that decorum ruled the meeting. "Christian gentlemen do not scream at each other," says Canon Feller. But there was no doubt, as Provost Perry puts it, that this was a "tender period" for church leadership. When Sayre retired in 1978, six months after Bishop Creighton's retirement, prospects for finishing the cathedral looked bleakest. Sayre, who now lives on Martha's Vineyard, will return to the cathedral this September to help celebrate its completion.

In 1977, John T. Walker, at 52, succeeded William F. Creighton as Episcopal Bishop of Washington. As a black clergyman in a church long identified with the white establishment of America, Bishop Walker, born in Georgia and brought up in Detroit, was used to breaking racial precedents. He was the first black

THE LOVE BOAT℠

We Just Found The Missing Piece Of Paradise.

Sparkling turquoise lagoons, flawless beaches, lush forests filled with the scent of orchids, and bronze natives who tell stories with their hands when they dance. It's paradise.

And the only missing piece was a luxurious ship to take you there to enjoy it. Until now.

This fall, for the first time ever, the beautiful Sea Princess® will offer two different itineraries between Hawaii and the islands of French Polynesia/Tahiti.

You can experience paradise the way it was meant to be. Continental cuisine designed to please the gourmet. European service. As well as the colors and sounds of Broadway and Las Vegas style shows.

To put the final piece in place, contact your travel agent, book by June 30, 1990 and save $400 per couple* with our Early Booking Discounts. To receive your own free full-color brochure, please call **1-800-765-0888.**

"It's More Than A Cruise. It's The Love Boat."

*Based on double occupancy.

Caribbean • Alaska • Mexico • Trans-Canal • South Pacific • Polynesia • Europe • Orient • Canada/New England • South America

PRINCESS CRUISES®

graduate of Virginia Theological Seminary, the first black member of the faculty of St. Paul's School in New Hampshire, and the first black Episcopal Bishop of Washington. To avoid any hint of conflict between the diocese and the cathedral, Bishop Walker decided to serve as the new dean of the cathedral.

As he wrote later, Bishop Walker felt both "depressed and concerned" as he took over. "I was depressed that cathedral debt and construction efforts would dominate my episcopate and take me away from the main thrust of my ministry to the diocese," he said. "At the same time I was concerned that if construction did not resume in a short time, the momentum would be lost and we might never again be in a position to complete the building."

But Bishop Walker also believed that the cathedral had "to reach beyond our immediate community into the city itself where there are homeless people, abused women and children, teenage alcoholics, drug addicts, murderers and rapists." If it did not, the bishop insisted, the cathedral could become "an anachronism, a museum piece, a stop on a tour of the capital city."

A trademark of the medieval cathedral, gargoyles serve as rainspouts and are carved with wit and whimsy.

Powered by this philosophy, he decided to move on both fronts—to raise funds to pay off the debt and continue construction of the cathedral to the roofline, which included an observation gallery, and to raise funds for a host of programs that would send the cathedral and its staff into the community.

Bishop Walker succeeded in an outstanding way. In 1983, with the debt nearly retired, the cathedral's Chapter decided to go ahead with construction on a pay-as-you-go basis and to include the two west towers that now complete the building. Provost Perry was given responsibility for raising funds and for administering the construction. The bishop then mounted a many-sided program that insured the cathedral a significant role in the life of the city. He attracted a large number of black priests and women priests to the diocese, became a tireless spokesman on the problems of poverty and the need for understanding for the victims of AIDS in the Washington community, and often took part in antiapartheid protests at the South African Embassy. He even criticized one of his friends, President Bush, for what he felt was a misleading Presidential election campaign in 1988. Through the work of the diocesan Commission on Peace and a committed staff, and many personal missions as well, the bishop also opened the cathedral to worldwide concerns far beyond the Washington community.

A different kind of message

Bishop Walker died at the age of 64 after heart surgery last September 30, just as cathedral officials were welcoming the final year of construction of the cathedral. The funeral services for him a week later drew 4,000 mourners, including President Bush, Archbishop Desmond Tutu of South Africa and 46 bishops. In a tribute that probably would have touched and satisfied Bishop Walker most, a *Washington Post* editorial said "there was a time when a bypasser could have been forgiven for thinking that the cathedral on its hill seemed to look down on the city with the disdain of accustomed wealth and social position. Today it sends a different message, one of concern for the city and an active involvement in its daily life. That change owes much to the remarkable man who was the bishop."

But Bishop Walker may be remembered best for finishing the cathedral. Suffragan Bishop Ronald Haines, who is serving as Acting Bishop until elections are held and Walker's successor is installed, says: "The completion of the cathedral is nothing short of miraculous. John Walker's whole life seems to have been destined for his position here; I don't know of anyone

As I See It # 12 in a series
Dan Weaks
'Two For The Tub'
Hand-Tinted Black & White Photography

THE BOLD LOOK
OF **KOHLER.**

Now who can deny the power of a perfect relationship? Which is why, piece for piece, the sculptured petal design of our Fleur Suite seems so absolutely right. It's clean. It flows. It all relates. Perfectly. (For Kohler by its sister company, Jacob Delafon, Paris.) See Yellow Pages for a Kohler® Registered Showroom. For complete product portfolio and idea book, send $8 to Kohler Co., Dept. AL8, Kohler, WI 53044 or call 1-800-4-KOHLER, ext. 36.

©1990 by Kohler Co

Rowan LeCompte's rose window in west portal is one of 200 stained-glass windows. The cathedral's crown jewel, it is resplendent at sunset. Completed in the early 1960s, it measures 24 feet in diameter.

else who could have done it. The cathedral is a monument to who John was in a remarkable way."

In the past decade, the number of visitors to the cathedral has surged: last year 600,000 either visited or attended services and concerts there. It is, of course, impossible to savor all of its beauty in a brief visit. The vast cathedral reveals itself best to those who have time to know it well.

Only once a year, for example, are visitors permitted to see the bells of the main tower. To reach these highest chambers of the cathedral, one must unlock wrought-iron gates, slip through passageways, turn around narrow nooks, climb dizzying spiral staircases and crowd into close, tortoise-paced elevators.

The cathedral has a carillon of 53 bells, ranging in weight from 15 pounds to 12 tons. They are controlled by an organlike instrument played by a musician. The cathedral's change-ringing bells, the largest of which weighs 1.75 tons, sound what are known as "changes" when their ropes are pulled by ringers standing in a chamber below. The change ringing dates from Dean Sayre's era, for he was an enthusiast of this art, once practiced in Colonial American churches and still a trademark of English cathedrals.

The opportunity to ring the bells attracts many different people, young and old, fascinated by the rich rhythms. On a recent Sunday, Will Ragland, a freelance writer and lecturer on architecture who once rang the bells himself, identified among the bell ringers a State Department analyst, a computer programmer, a communications expert, a Securities and Exchange Commission lawyer, and a Congressional aide.

When the bells first rang out in 1964, people living in the neighborhood of the cathedral were curious, even enthusiastic, but they quickly found themselves frazzled by the powerful clanging. The renowned journalist Walter Lippmann, a good friend of Dean Sayre's, lived across the street and whipped himself into a fury over the decibels pounding his mind as he tried to write his column. "When the bells were ringing," Canon Feller recalled, "it would drive him up the wall. He complained to Sayre all the time, and so did the neighborhood." Dean Sayre soon ordered the bell tower baffled on the side facing the community, and

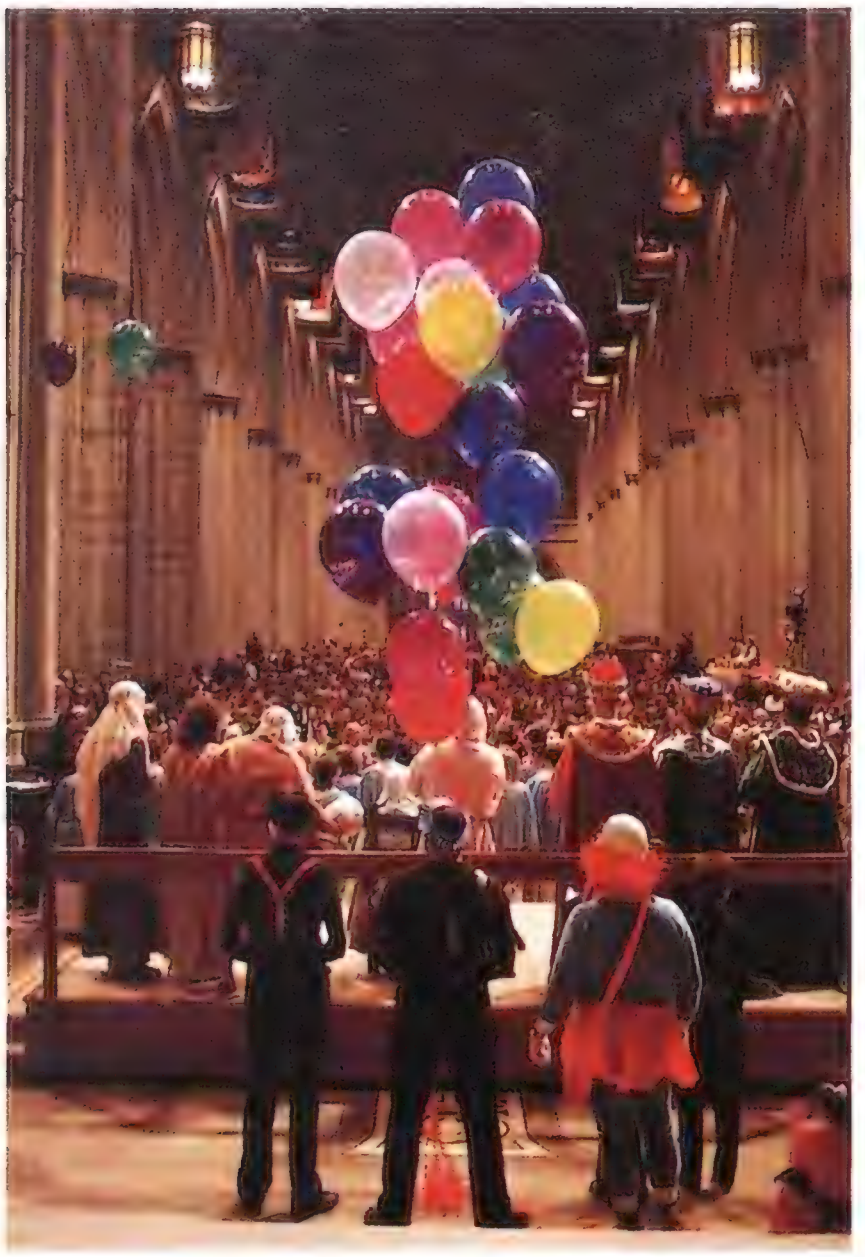
Thank Dad for being more proud than angry.

Johnnie Walker
BLACK LABEL
AGED 12 YEARS

Ultimately, there's Black.

Send a gift of Johnnie Walker® Black Label® anywhere in the U.S.A. Call 1-800-243-3787. Void where prohibited.

© 1990 SCHIEFFELIN & SOMERSET CO. NY, NY. JOHNNIE WALKER ® BLACK LABEL® BLENDED SCOTCH WHISKY. 43.4% Alc/Vol (86.8°)



Christmas Eve pageant begins with traditional Nativity scene and winds up with contemporary festivities.

the pealing of the bells no longer reverberates through every home in the area.

The cathedral has hundreds upon hundreds of stone carvings on nooks and bosses and crevices and towers and columns and recesses and spires, and it is impossible for any visitor to take in more than a few score. Even Clerk of the Works Feller probably does not know them all. Gargoyles, the monsters that served medieval cathedrals both as rainspouts and as guardians against evil, are a delight. Canon Feller once came upon an assistant carver completing a gargoyle in the person of a stubble-bearded man with a mallet in one hand, a set of golf clubs stuck in his hip pocket, and a fierce cloud exploding from his head. The caricature seemed to resemble short-tempered master carver Roger Morigi. "Is that Roger Morigi you're carving—blowing his top?" Feller asked. "No, indeed," the assistant replied. "I love my job here." A hippie and a yuppie are also represented among the 105 other gargoyles. The last one, a prehistoric man clutching a club, was set in place in 1987.

Aside from creating gargoyles, the sculptors and carvers have delved into their imaginations to fill the cathedral with statuettes and reliefs of a mouse, a cat, Aztecs, neighborhood dogs, and even a monkey named Eve proffering an apple. At architect Frohman's request, sculptor Carl Bush created two versions of the same architect, one pulling his hair and scratching his head out of frustration and puzzlement, the other holding a finger in the air as if to say, "I've got it!"

Since light is the essence of a Gothic church, no visitor can ignore the power of the more than 200 stained-glass windows. An enthusiastic Provost Perry showed me some of his favorites, all by Rowan LeCompte, on a recent sunlit morning. Gothic cathedrals usually have at least one rose window—a composition in the round with panels like petals—and the provost began his tour with the west front's abstract rose window, its glass fitted with prisms that spray the cathedral with rays of color.

Provost Perry then pointed to the Noah window high in the nave. LeCompte depicts the evil on Earth before the Flood as a terrible violence, two soldiers slaughtering each other, and a deep pile of skulls. "This is not the usual depiction of the story of Noah," the provost said, "but it tells us what the story of Noah is all about—God's anger and hostility toward Man's violence."

A special event at the cathedral can sometimes turn everyone's attention to a single window. At a recent conference that considered contemporary scientific accounts of the creation of the Earth alongside biblical ones, a service was celebrated in front of the cathedral's most unusual window, the one devoted to space. Designed by Rodney Winfield, it not only depicts dark-blue astronomical bodies—an unusual subject for a Gothic cathedral—but also contains a piece of moon rock embedded in its glass. The piece was brought back by astronauts Neil Armstrong, Edwin Aldrin jr. and Michael Collins after the moon landing in 1969.

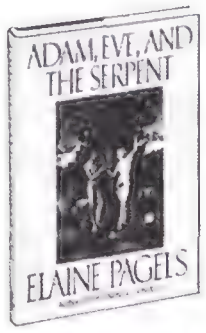
Collins, a graduate of St. Albans School, which is on the cathedral grounds, and the pilot who orbited above while Armstrong and Aldrin walked on the moon, presided at that part of the service. Organ music filled the cathedral, its tones eerie, mystical. "Forty-seven years ago when I was a student at St. Albans School several hundred yards away," Collins began, "I would have never thought that I would be standing here under a piece of the moon, tongue-tied in the cathedral." The astronaut hailed the impending completion of the cathedral but made it clear that he, like many others, believed that this majestic Gothic building would add still more wonders in the decades ahead. "Someday," he said, "I hope there will be a little piece of Mars to match the chunk of the moon."

At Sunday service, the cathedral in all its Gothic glory welcomes visitors from throughout the country.

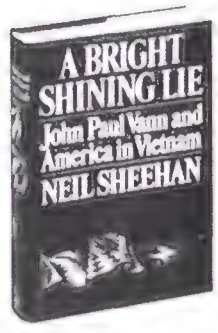
TAKE ANY 3 FOR

HISTORY BOOK CLUB
The best of history all in one place.

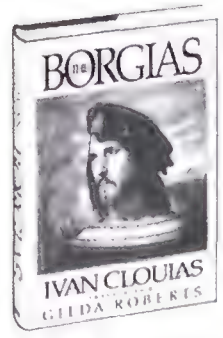
2410. $19.95/**$16.95**



7526. $17.95/**$15.50**

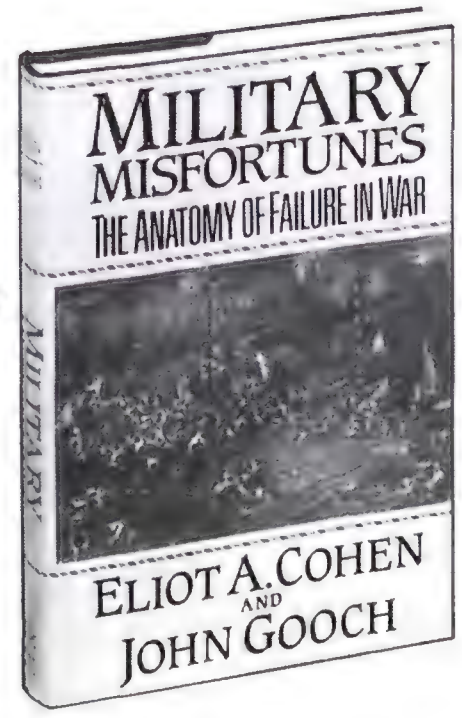


1495. $24.95/**$18.50**

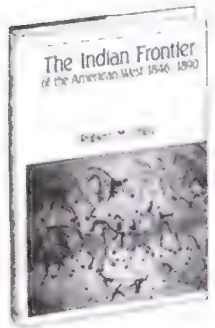


1206. $24.95/**$19.50**

3467. $24/**$18.50**



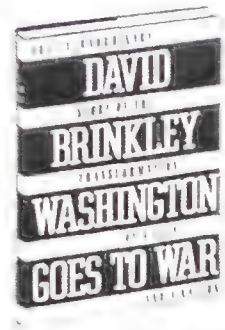
3004. $22.95/**$17.95**



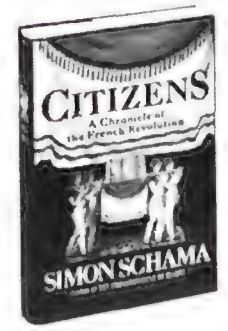
8490. $19.95/**$13.95**

3715. $29.95/**$19.95**

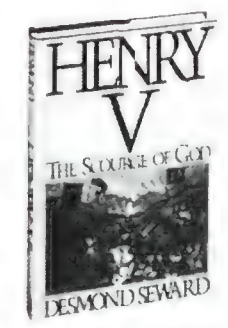
1792. $22.95/**$18.50**



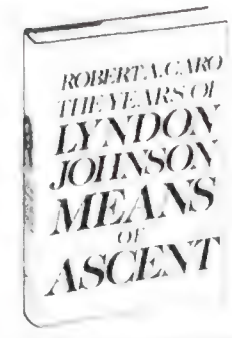
6130. $18.95/**$15.95**



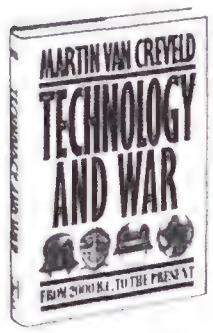
1396. $29.95/**$21.95**



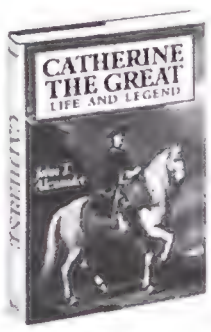
7641. $19.95/**$16.50**



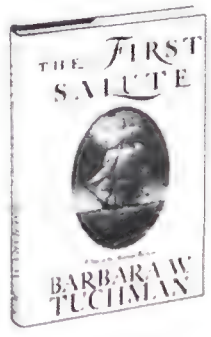
5058. $24.95/**$21.95**



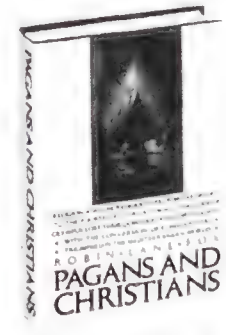
1024. $22.95/**$17.95**



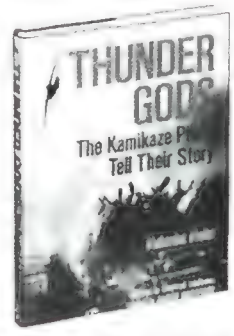
1073. $24.95/**$18.95**



6080. $22.95/**$17.50**

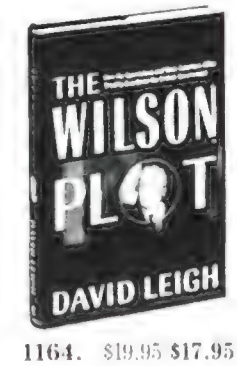


3806. $40/**$23.50**

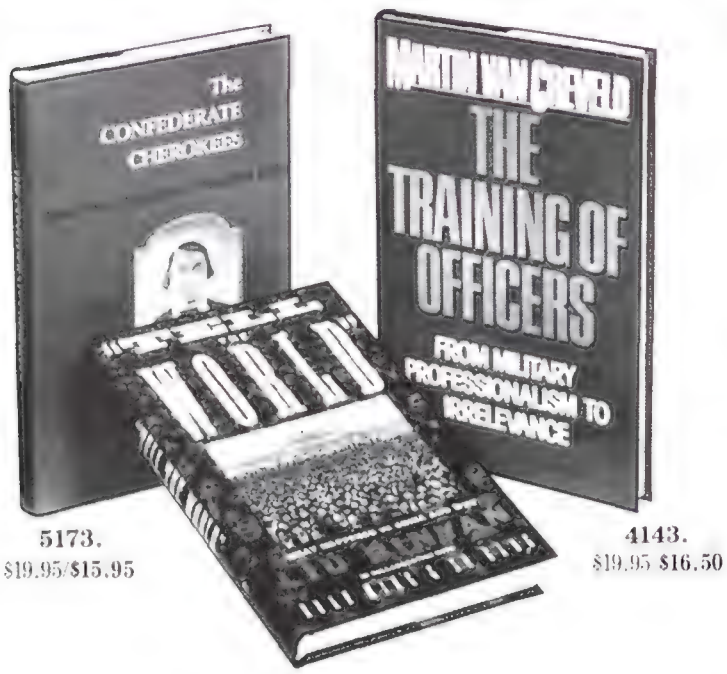


2220. $18.95/**$16.50**

7005. $39.95/**$21.50**



1164. $19.95 **$17.95**

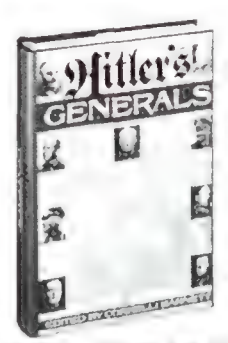


5173.
$19.95/**$15.95**

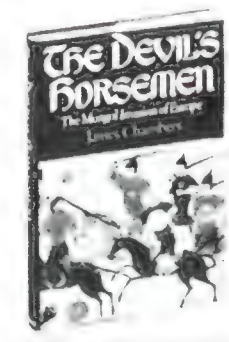
4143.
$19.95 **$16.50**

4358. $18.45/**$14.50**

2725. $35 **$24.95**

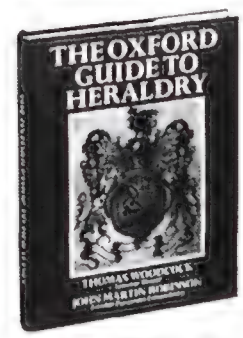


3673. $24.95 **$18.95**

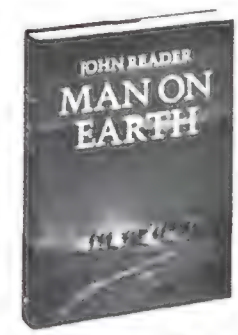


8094. $16.95/**$10.95**

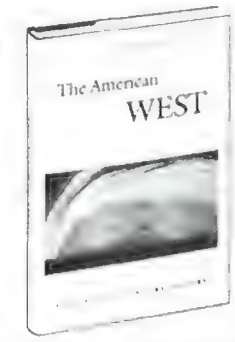
1859. $15/**$10.50**



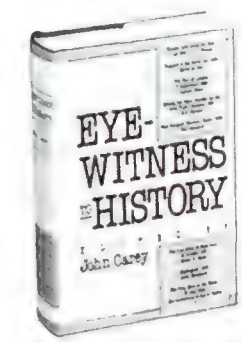
8185. $35/**$26.50**



1677. $29.95/**$22.95**



2675. $31.50/**$21.50**

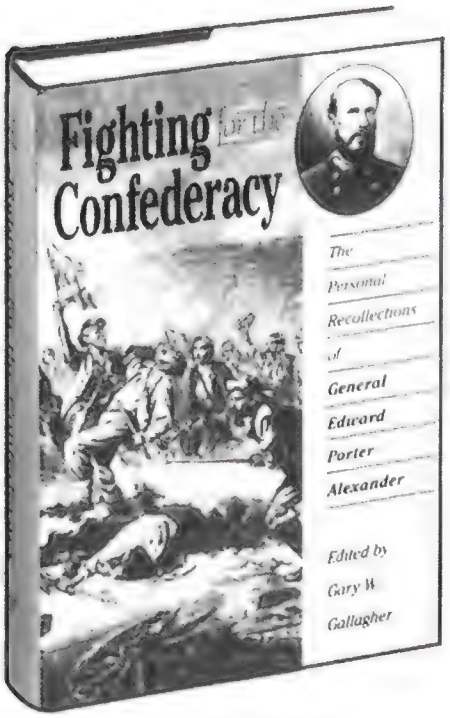


6007. $24.95/**$17.95**

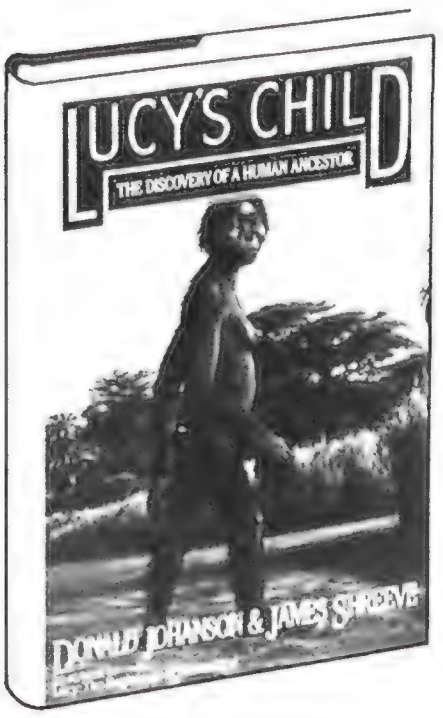
$1 EACH

Plus a 4th at the low Member's Price.

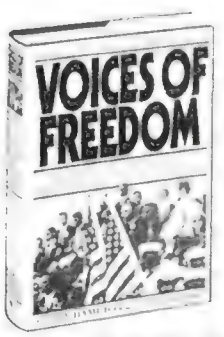
WITH NO OBLIGATION TO BUY MORE.



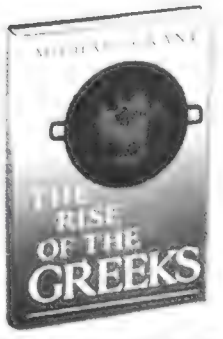
1818. $34.95/$22.50



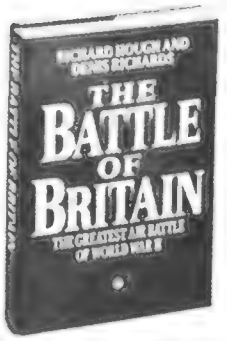
1875. $22.95/$18.50



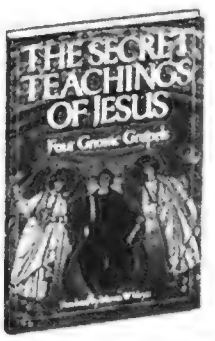
4440. $25.95/$19.95



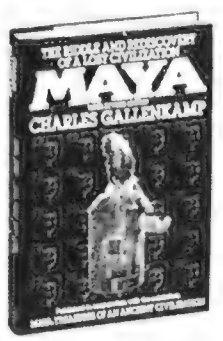
5884. $27.50/$18.50



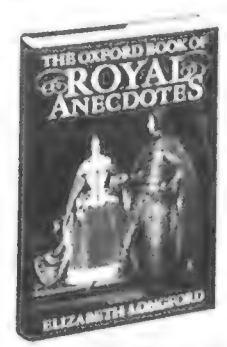
2386. $27.50/$21.50



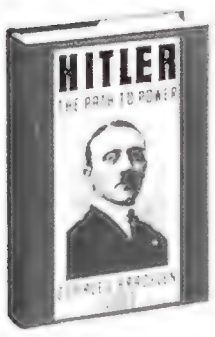
1784. $15.95/$13.50



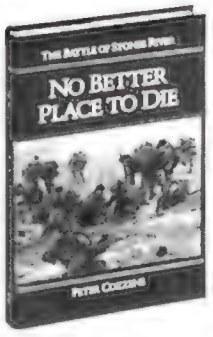
2535. $22.95/$16.95



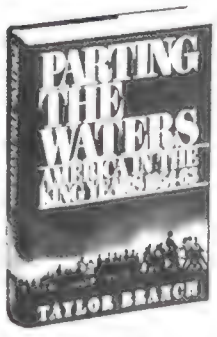
1636. $22.50/$18.95



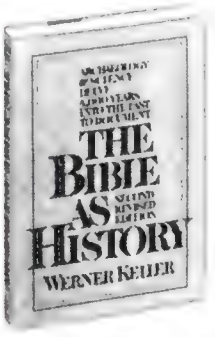
1701. $24.95/$18.95



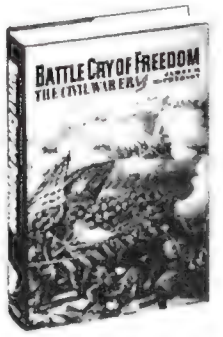
4093. $24.95/$18.50



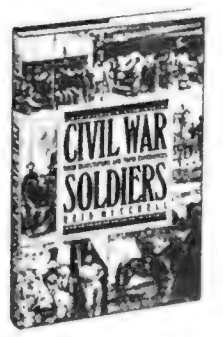
1081. $24.95/$18.95



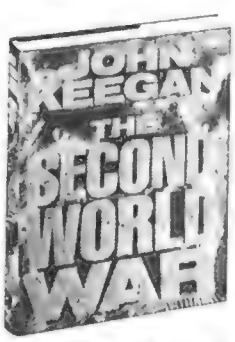
3012. $21.95 $16.95



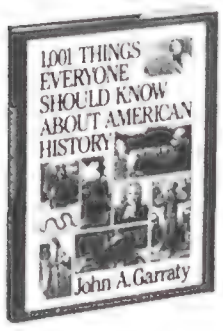
3988. $35 $22.50



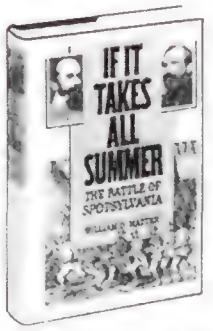
2105. $19.95 $16.95



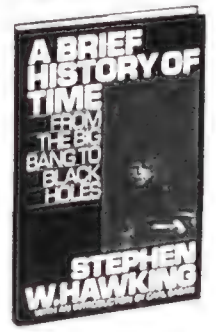
3434. $29.95/$23.50



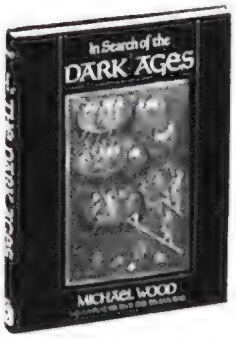
1057. $19.95/$17.50



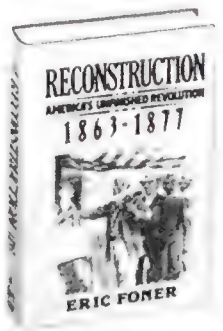
3970. $22.95/$19.95



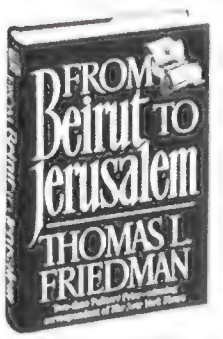
3087. $18.95/$16.95



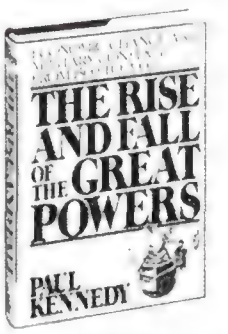
6981. $22.95/$16.95



6767. $29.95 $18.95



1925. $22.95/$17.50



1644. $24.95/$17.50

Save on the best recent history titles.

No matter what area of history you enjoy reading about most, you'll find that History Book Club offers some of the finest selections being published today. And no book club we know offers greater savings—as much as 30% off publishers' list prices.

You can save even more by taking advantage of our Introductory Offer. Select any three books on this page for $1 each when you take a fourth book at the low Member's Price—plus shipping and handling. Thereafter, you're not obligated to order any more books. You may cancel membership at any time by notifying History Book Club. We may cancel your membership if you elect not to buy at least one book in any six-month period.

How the Club works. You'll be able to choose from 150 to 200 books featured each month. History Book Club always offers its members well-made, long-lasting editions.

You'll receive our *Review* and a dated Reply Form 14 times a year (about every 4 weeks), plus up to 4 more offers of special selections. If you want the "Editors' Choice," do nothing—the book will come automatically. If you want another book, or no books at all, return the Reply Form by the date specified. A shipping and handling charge is added to each shipment.

Your HBC guarantee: If you receive an unwanted "Editors' Choice" because you had fewer than 10 days to decide, simply return it and pay nothing.

(First price is Publisher's List. **Boldface** is Member's Price.)

HISTORY BOOK CLUB®
Camp Hill, PA 17012-8805

Please enroll me in History Book Club according to the no-risk, no-commitment terms outlined in the accompanying ad. Send me the four books whose numbers I have listed below. Bill me $1 each for the 3 choices on the left, and the fourth at the low Member's Price—plus shipping and handling.

H454-6-0

0-13

Name_____
(Please print clearly.)

Address_____ Apt. #_____

City_____

State_____ Zip_____

All orders subject to approval. Prices generally higher in Canada.
© 1990 History Book Club, Inc.

By Patricia O'Toole

What they all had in common was wit and friendship

In the nation's capital in the 1880s, Henry and Clover Adams founded the 'Five of Hearts,' an elegant circle who helped define an age

London had its Bloomsbury group, Paris the salon of Gertrude Stein. Washington in the late 19th century had Henry Adams and the Five of Hearts—an elite circle who helped define an age and whose gift for friendship connected them to the most influential figures of their time.

"Among us, we know all mankind," Adams boasted of the Five of Hearts. He exaggerated, but not much: they knew Mark Twain and Walt Whitman, Henry James and Edith Wharton, Bret Harte and William Dean Howells, Horace Greeley, Robert Louis Stevenson, Bernard Berenson, Andrew Carnegie, the painters John La Farge and John Singer Sargent, the sculptor Augustus Saint-Gaudens and every President from Abraham Lincoln to Theodore Roosevelt. The five and their friends are celebrated in a new exhibition, "The Five of Hearts: Henry Adams and His Washington Circle," that runs June 9 through November 4 at the Smithsonian's National Portrait Gallery.

Like many friendships, the Five of Hearts' flickered into being by chance. It was the autumn of 1880. Henry Adams and his wife, Marian ("Clover" to friends), had just come home to Washington after a year in Europe, where Henry had been looking into the beginnings of American diplomacy for a book. A Harvard professor who had given up teaching history in order to write it, Henry left Europe with no regrets, convinced the future belonged to the United States.

He intended to watch from a front-row seat, in Washington, and by December the Adamses were settled in the capital's choicest neighborhood, in a graceful three-story mansion on Lafayette Square, facing the White House. Out went invitations to tea—though not to everyone. With two Presidents in Henry's family (grandfather John Quincy and great-grandfather John) and a small fortune from Clover's industrious Massachusetts forebears, the Adamses were unawed by power and wealth, the standard tickets of admission to "good" drawing rooms. What they craved were companions who amused—bright minds, lively conversationalists, cultivated men and women who displayed what Henry called "taste and dexterity."

In the winter of 1880-81, no one amused Henry and Clover more than Clarence King and John and Clara Hay of Cleveland. King, a dashing blue-eyed bachelor who wore his beard and blond hair cropped close, was director of the U.S. Geological Survey. John Hay, who had begun his Washington career at 22 as a secretary to President Lincoln, was serving as Assistant Secretary of State. King and Hay had been close friends for years, and both had known the Adamses slightly in the past.

Once assembled, the quintet met almost daily for tea, often dined together and soon solemnized their bond by giving themselves a name—the Five of Hearts. Though they left almost no record of these first encounters, it is easy to picture them in the Adamses' high-ceilinged drawing room, surrounded by superb English paintings—Turners, Constables and Boningtons—for Clover, particularly, had a fine collector's eye. Around the room, on elegant Oriental rugs, were potted palms and wine-red leather armchairs, cut low and small to fit their owners. Henry Adams stood just 5 feet 4, Clover 5 feet 2. Hay was Clover's height, Clara slightly taller. At 5 feet 6 and muscular, King was the burliest of the lot. In age they ranged from 42 (John and Henry) to 31 (Clara). King was 38, a year older than Clover.

Like most groups of friends, the Five of Hearts had a few traits in common—and many differences. Henry and Clover Adams were linked by the Brahminism of Boston, but John Hay, raised in Illinois, was a frontiersman—a species considered innately inferior by the denizens of Beacon Hill. Clara Hay, the daughter of an immensely rich Ohio businessman, rarely uttered a word and seemed a strange companion for her loquacious husband and his witty friends, who talked unceasingly and punned without mercy. When one of

The "Hearts," as the five referred to themselves collectively, each had an assigned position on an imaginary playing card. Around Clarence King, at center, are (from top left) Clover and Henry Adams, John Hay and his wife, Clara Hay.

5 ♥

♥ 5

The Hay mansion and the Adams dwelling to its left are on the site of Hay-Adams Hotel. Small white house was earlier Adams residence.

the Adamses' Skye terriers developed an eye problem, Hay pronounced it a case of "cataract." King leaned toward a diagnosis of "tom-cataract." Clover, impatient with Hay's reverence for the elaborate prose of Henry James, declared that James' chief defect was not that he bit off more than he could chaw but that "he chaws more than he bites off."

All the male Hearts had won literary accolades: Hay as the author of comic verse and an editor of Horace Greeley's New York *Tribune*, Adams as a political journalist and the editor of the *North American Review*, and King as the author of *Mountaineering in the Sierra Nevada*, a collection of essays written during his years as a geologist in the American West.

In politics, the Five of Hearts believed fervently in democracy but feared that the ideals of the Founding Fathers were being perverted. Henry Adams expressed some of his worries in a novel, *Democracy*, which satirized corruption and greed in the Washington of President Ulysses S. Grant and his successor, Rutherford B. Hayes. Published anonymously in 1880, *Democracy* became a best-seller and the object of a national guessing game: Who had written it? Outside the Five of Hearts, almost no one knew until after Adams' death in 1918.

John Hay thought America had less to fear from the rich than from the growing political power of immigrants, who in his view were too easily swayed by demagogues. He too would voice his apprehensions anonymously in a provocative novel, *The Bread-Winners*, which appeared in 1883.

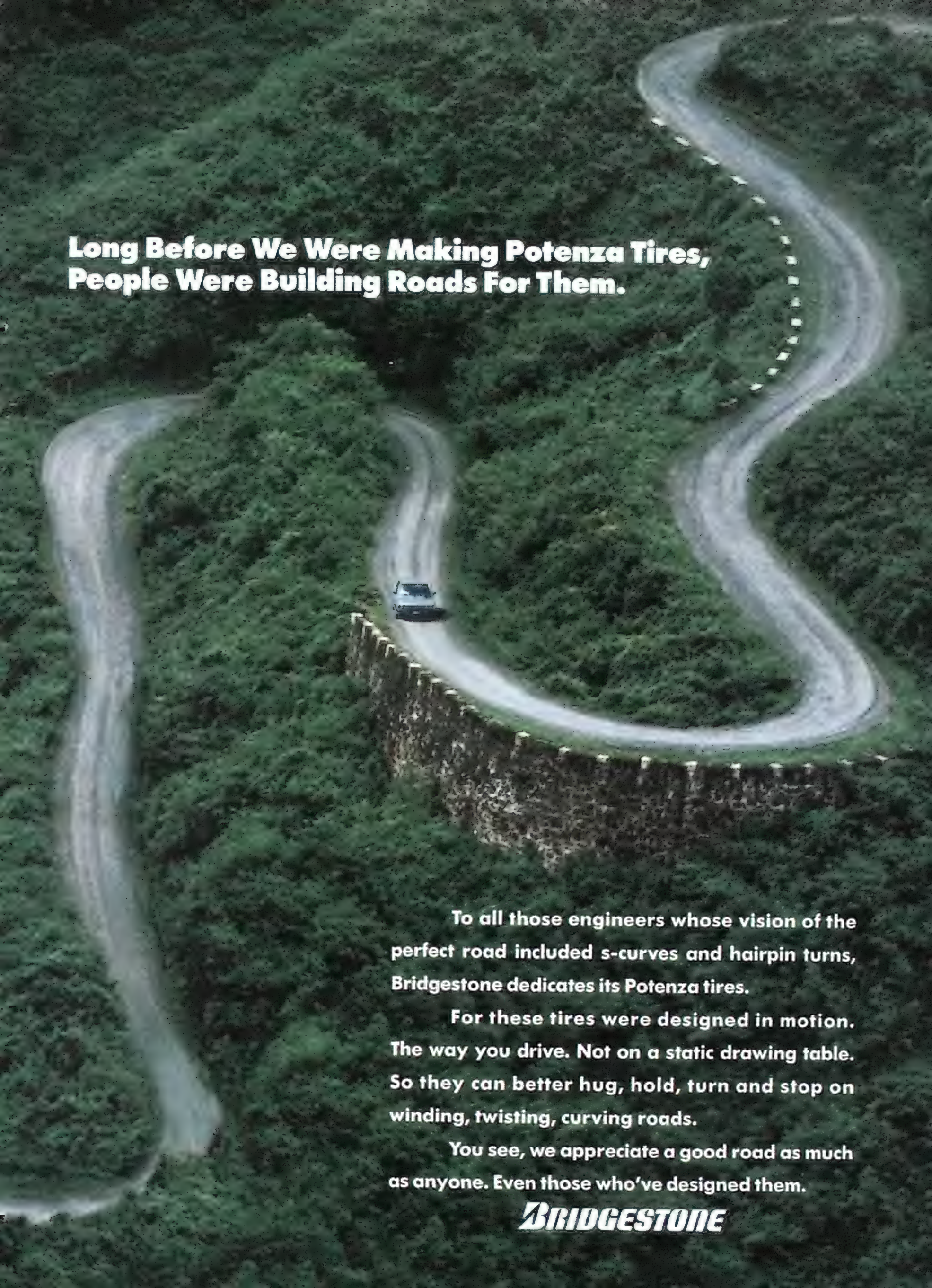
As women, Clover and Clara could not vote, but beyond that they occupied little common ground. Clara was the model pious, upper-class Victorian wife and mother. Clover longed for children but took no comfort in religion and chafed at the social conventions that kept women in the shadow of men. Clara was quiet and docile, Clover outspoken, rebellious and pungently clever. "Congress bumbles on," she wrote her father. "Everyone laughs at its assumed spasms of virtue." King admired Clover's spirit but revered the "calm and grand" Clara Hay. In the face of her repose, he thought, even Nirvana seemed "fidgety."

The Five of Hearts shared a love of literature and, unlike their expatriate friend Henry James, who found his native land too lacking in nuance for the making of novels, they were ardently American. Henry Adams not only believed the future belonged to the United States, he dared to hope that he and his friends would be among "the first faint rays of that great light which is to dazzle and set the world on fire hereafter."

For Henry and Clover, the only cloud on this bright horizon was the departure of their fellow Hearts. James A. Garfield would be inaugurated on March 4, 1881, succeeding President Hayes, and both Clarence King and John Hay took it as an opportune moment to slip out of Washington. The Hays were returning to their easeful life in Cleveland, where John helped Clara's father manage his millions. In his spare time, Hay collaborated on a life of Lincoln with John George Nicolay, who had served with him as a secretary in the Civil War White House.

King began his career surveying the mountains of California and in 1867, at 25, was named leader of the U.S. Geological Exploration of the Fortieth Parallel, one of the most ambitious scientific undertakings Congress had ever funded. With a crew of 35, he spent nearly ten years studying one of the wildest stretches along the planned route of the first transcontinental railroad, from the eastern slope of the Sierra Nevada to the eastern slope of the Rockies. King's team made maps, catalogued flora and fauna, and helped pave the way for settlement by sizing up supplies of water, coal and other resources. Widely praised, King's work led to the creation of a permanent agency.

This article, as well as the new "Hearts" exhibit at the National Portrait Gallery, is based on the author's book The Five of Hearts, *published by Clarkson N. Potter.*



To all those engineers whose vision of the perfect road included s-curves and hairpin turns, Bridgestone dedicates its Potenza tires.

For these tires were designed in motion. The way you drive. Not on a static drawing table. So they can better hug, hold, turn and stop on winding, twisting, curving roads.

You see, we appreciate a good road as much as anyone. Even those who've designed them.

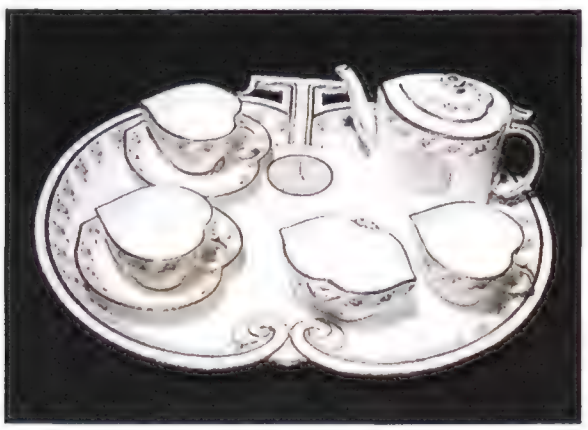
BRIDGESTONE

the U.S. Geological Survey, with King as its first chief. But now in 1881, eager to turn his knowledge into a fortune, he was leaving government to go to Mexico in search of the fabled lost silver mines of the conquistadors.

To Hay and Adams, King was an object of veneration. Even more than his evident triumphs as a scientist and leader, the fact that his life showed no gap between idea and action won their admiration. In politics, the only arena where Adams had tried to exert influence, his one practical achievement would be helping draft, for Senator James Donald Cameron of Pennsylvania, an amendment calling for the recognition of the independence of Cuba from Spain. Adams' thoughts invariably led to a sense of futility. Hay was less despairing but found it easier to carry out the wishes of others than to steer his own course. All three men considered public service to be an obligation. But Adams waited for someone in government to ask his help, while Hay could not leave Washington quickly enough. Only King, they felt, had discharged his civic duties with pride and satisfaction. They might write history, but King would make it.

Listening to Henry and John praise King, Clover mockingly declared that she "never knew such fanatic adoration could exist in this practical age." Henry observed that women "were jealous of the power [King] had over men; but women were many and Kings were one. The men worshipped not so much their friend, as the ideal American they all wanted to be." Sure King would succeed, Hay and Adams were among the first to invest in his Mexican mines.

Clover Adams became a photographer in the early 1880s. This portrait required dexterity and restraint on the part of both artist and subjects.



Uncharacteristically kitschy was the Hearts' sentimental tea set.

Garfield moved into the White House, the Five of Hearts said farewell, and without the others Clover found teatime a bore. She escaped it by taking long afternoon rides. Typically, the Adamses rode together in the mornings, and Henry spent his afternoons writing history in his study. But in spite of time and distance, the friendship of the Five of Hearts flourished. Shuttling between Mexico and a business office on Wall Street, King saw John and Clara in Cleveland and Henry and Clover on Lafayette Square. The Hays called on the Adamses, and the Adamses traveled to Cleveland. Scores of letters flew back and forth, many on stationery embossed with five small red hearts arranged in the playing-card pattern—the contribution of John Hay.

In 1883, hoping to establish a permanent Five of Hearts enclave on Lafayette Square, the Hays and Adamses acquired a piece of property at the corner of H and 16th streets (present site of the Hay-Adams Hotel). King was invited to join but declined. Discouraged by a lengthening list of financial complications, he was also feeling oppressed by his bachelorhood. "I am human and could not bear the exasperating spectacle of your and Hay's domestic happiness," he confessed to Adams.

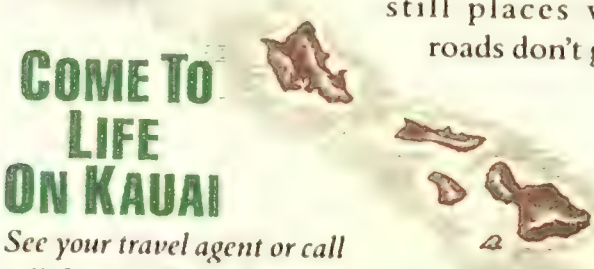
Adams and Hay went ahead, commissioning the most celebrated architect of the day, Henry Hobson Richardson. Though Clover disparaged Richardson's Romanesque hulks as "neo-agnostic," she was soon sufficiently absorbed to keep the Hays up to date on their house by recording the construction with her camera. Photography had become a passion. She hauled her big box camera to Rock Creek Park, posed her beloved Skye terriers with their front paws on a tiny table set for tea and made portraits of numerous friends, including Richardson, John La Farge, future Supreme Court Justice Oliver Wendell Holmes, historian George Bancroft and the Hays' children. A favorite among the Five of Hearts was her picture of John clasping a copy of *Democracy* to his breast as if he had written the book. The fact that critics variously accused Hay, King and both Adamses of writ-

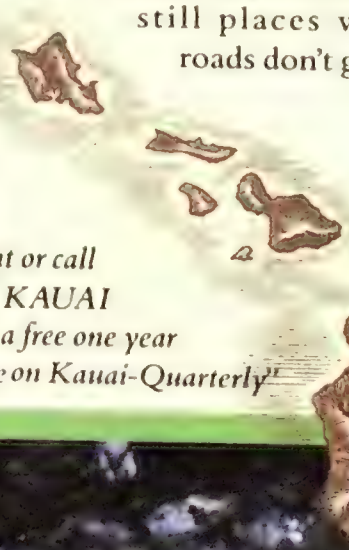
LIFE ON KAUAI

Along the Na Pali coast, there is an 11-mile hike called the Kalalau Trail. When considering this challenge, there are two things to remember: the path is never flat and the scenery is never dull.

The road to Kauai's north end stops completely at the entrance to the Kalalau trail. In ancient times only royalty was allowed access to this part of the island.

Today anyone can enjoy the breathtaking views on the trail, pick guava from the trees or rest on secluded north shore beaches. And while climbing over rocks, up towering hills and through streams isn't easy, it's worth it. After all, people come to life on Kauai because there are still places where roads don't go.





COME TO LIFE ON KAUAI

See your travel agent or call toll-free 1 800-AH KAUAI for information and a free one year subscription to "Life on Kauai-Quarterly"

ing it became one of the Hearts' long-running inside jokes.

Photography was a welcome distraction from sorrows the Adamses felt but did not fully understand. For unknown reasons, they could not have children, which became a grief to Clover. Like many who came of age in the years just after 1859, when Darwin published his theory of evolution, Henry and Clover were religious skeptics. After listening to the famous Phillips Brooks preaching, Clover lamented, "neither heart nor brain got any food."

Clover eventually appears to have suffered a religious crisis. To Henry's distress, she insisted that a cross be carved on the facade of their new house. Henry, perhaps struggling for a deeper grasp of Clover's spiritual anguish, made it the centerpiece of another clandestine novel, *Esther*. The title character, who shares many of Clover's personal and physical traits, tries to reason her way to faith but concludes in despair that it cannot be done. It would be years before Henry would share the secret of *Esther* even with his fellow Hearts. In the spring of 1885, Clover's father died, and she sank into a depression that never lifted. On December 6, a few weeks before the new house was finished, she drank potassium cyanide, one of her photographic chemicals.

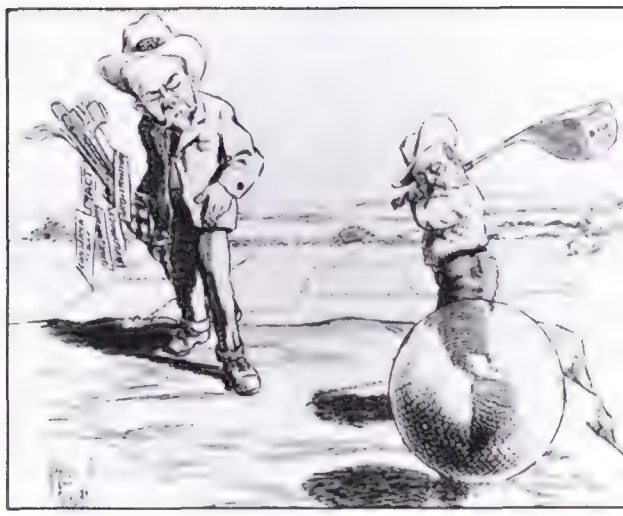
In 1890 Adams made a Pacific tour with the painter John La Farge (in the hat).

Her suicide was front-page news, and with public humiliation added to private guilt and sorrow, Henry vowed to survive by not looking back. "I feel like a volunteer in his first battle," he told John Hay. "If I don't run ahead at full speed, I shall run away." Characteristically, Henry turned his grief inward. He was overwhelmed, too, by learning from letters of condolence how many sorrows others had endured. "What a vast fraternity it is," he told his publisher, "—that of 'Hearts that Ache.' "

Although the stationery with the red hearts disappeared after Clover's death, the shock of her loss seemed to bind the friends closer together. In the summer of 1886, while Henry traveled in Japan with John La Farge, Hay and King laid plans for another colony—this one at Lake Sunapee in New Hampshire, where the Hearts could summer with one another and a few special friends, such as *Harper's Magazine* editor and novelist William Dean Howells. King instructed Adams to bring home a Japanese house for a corner of their acreage, imagining that he and John and Henry could pass their days there, writing history together. (The serene and obliging Clara, King fantasized, would tend to their domestic needs.)

Adams felt no attraction to Sunapee. Nor was King's enthusiasm as deep as it seemed. In 1887, unknown to his friends, he embarked on a romance in New York with a black nursemaid named Ada Copeland. King was 45, Ada 26. In 1888 he persuaded her to become his bride in a ceremony that included everything but a marriage license. There was one other lapse: the groom told the bride his name was James Todd.

Mr. Todd installed Mrs. Todd in a comfortable house in Brooklyn, and over the next eight years they had five children. As King juggled his two



A 1901 cartoon spoofed John Hay's role in TR's muscular foreign policy.

lives he spent long periods away from Brooklyn—pursuing mining ventures, playing the gentleman at the Century and Metropolitan clubs in Manhattan, and visiting his friends on Lafayette Square. Mrs. Todd thought she knew why Mr. Todd was away. He had told her he was a railroad porter.

Though King counted Hay and Adams his closest friends, he could not bring himself to tell them about Ada Todd. He grew so furtive that Hay began to suspect he had joined "some oath-bound order which pledged him, under fearful sanctions, never to tell anybody anything."

The strain of King's double life caught up with him in 1893. Deeply in debt to Hay and further hurt by the summer's financial panic, he had managed to hang on until an old spinal injury flared up. For weeks, fraught with tension, he was unable to sleep. One Sunday, exhausted and in excruciating pain, he stood before the caged lions of the Central Park Zoo. Someone bumped him, and he went berserk. He was arrested, booked on charges of disorderly conduct and carried off to an asylum.

Is Clarence King Insane? asked the New York *Sun*. Adams thought not, but as he read the newspaper accounts of King's breakdown he deduced that something remained untold. What it was he did not care. All he wanted was his friend's recovery, and as soon as King was well enough

THE KISS OF DEATH?

We now import more than 40 percent of all the oil we use, and that percentage continues to grow. This excessive dependence on foreign oil could poison America's economy and our national security if our supply were ever disrupted.

But the more we use nuclear energy, instead of imported oil, to generate our electricity, the less we have to depend on uncertain foreign oil supplies.

America's 112 nuclear electric plants already have cut foreign oil dependence by 4 billion barrels since the oil embargo of 1973, saving us $115 billion in foreign oil payments.

But 112 nuclear plants will not be enough to meet our rapidly growing demand for electricity. We need more plants.

Importing so much oil is a danger America must avoid. We need to rely more on energy sources we can count on, like nuclear energy.

For a free booklet on nuclear energy, write to the U.S. Council for Energy Awareness, P.O. Box 66080, Dept. SK06, Washington, D.C. 20035.

U.S. COUNCIL FOR ENERGY AWARENESS

Nuclear energy means more energy independence.

1990 USCEA

to travel, Adams took him off to the Caribbean for a long holiday.

Back home, King was full of promises for Hay. The loans would soon be repaid, he vowed. "I have resolved . . . to smother and hide my pessimistic hate of civilization and be as straightlaced and wooden and fatuously American as anybody. I shall go to the Metropolitan Club and make myself beloved of all the stable boys whom fate has raised to the *n*th power . . . and carry off the role of a good practical sensible American bourgeois cad, to the queen's taste. . . . I have sinned, I own, in allowing my nature to influence my life. I shall do it no more till I am able to say to my nature, 'at last it is your turn, be free!' "

King loathed the tycoons of the Metropolitan Club, not because he shared Adams' conviction that they were greedily ruining America but because the demands of their world stood between him and his first love, science. There was no "truer hero," he believed, than the scientist who "never loses heart in a life-long grapple with the powers of the universe." He seemed qualified for a place in the scientific pantheon, but supporting both his mother's large household in Newport, Rhode Island, and his secret family left him no money or leisure to pursue his research.

With a few exceptions like the Caribbean excursion, Henry's life after Clover's death fell into a pattern of summers abroad and winters on Lafayette Square, where his breakfast table acquired the celebrity his drawing room once had. Served at 12:30, a Henry Adams breakfast was governed by only one rule: guests must invite themselves. Friends were encouraged to bring new faces, and without being told, understood that the host would tolerate anyone but a bore.

When breakfast adjourned, Henry spent afternoons working on his magisterial nine-volume *History of the United States during the Administrations of Thomas Jefferson and James Madison.* He finished in 1889, shortly before Hay and Nicolay completed the ten volumes of their *Abraham Lincoln: A History.*

After leaving Washington in 1881, Hay showed little interest in politics. In those days, his friend Mark Twain hoped Hay would run for Congress, believing that the "presence of such a man in politics is like a vase of attar of roses in a glue-factory—it can't extinguish the stink, but it modifies it." Hay wanted no part of the "glue-factory." But in 1896, at the prompting of Mark Hanna, a Cleveland industrialist and Republican kingmaker, Hay wrote generous checks to William McKinley's Presidential campaign and shouted himself hoarse on Republican

Independent research shows:

NordicTrack preferred six to one over bikes and rowers

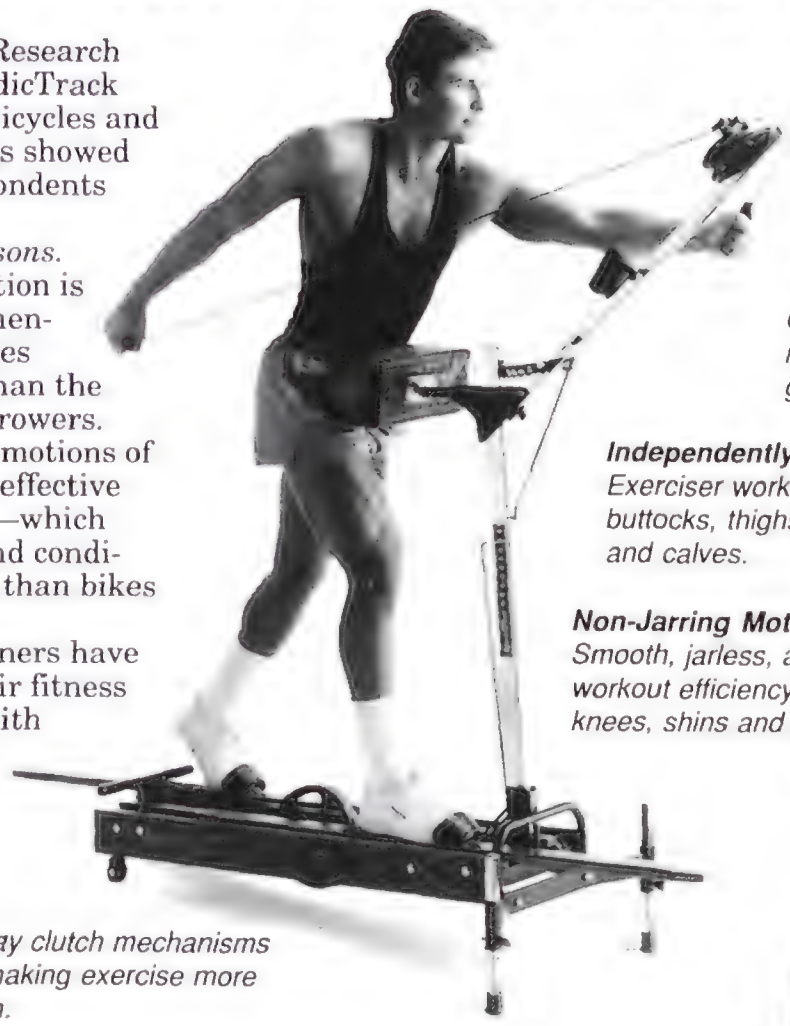
In 1988 Burke Marketing Research conducted a survey among NordicTrack owners who also own exercise bicycles and rowing machines. Their findings showed that by a margin of 6 to 1, respondents prefer their NordicTracks.

They have several good reasons.

NordicTrack's upright position is more absorbing and fun, both mentally and physically, and provides greater freedom of movement than the sit-down positions of bikes and rowers.

NordicTrack simulates the motions of cross-country skiing—the most effective form of aerobic exercise known—which means it burns more calories and conditions more muscles in less time than bikes and rowers.

All of which means that owners have found that they can achieve their fitness goals more quickly and easily with NordicTrack than with bikes and rowers, and without risk of injury.



Independently Adjustable Upper Body Exerciser
Upper body exerciser works extensor muscles of the back, trunk rotators, biceps, triceps, shoulders, chest and upper back.

Stand-up Position
Comfortable upright position is more natural, more stimulating and allows greater freedom of movement.

Independently Adjustable Lower Body Exerciser
Exerciser works hip flexors, gluteus muscles of the buttocks, thighs, hamstrings, knee extensors, ankles and calves.

Non-Jarring Motion
Smooth, jarless, aerobic motion ensures maximum workout efficiency while eliminating the risk of injury to the knees, shins and back.

Patented Flywheel
Patented flywheel and one-way clutch mechanisms provide continuity of motion making exercise more pleasant and easier to sustain.

Free Brochure & Video

1-800-328-5888

In Canada 1-800-433-9582

NordicTrack
A CML Company

hustings. After trouncing William Jennings Bryan in November, McKinley rewarded the somewhat reluctant Hay with an appointment as ambassador to England.

Adams accepted the Hays' invitation to make the voyage to Britain, but when he saw how little time the new ambassador's schedule left for friends, he moved on to Paris. "London does not need me," he concluded. He would not permit himself to say it was Hay who didn't need him, but when the two friends parted in the spring of 1897, they headed in opposite directions. Hay was looking toward the new century and America's emergence as a world power. Adams, wanting no part of it, had already sought refuge in the soaring cathedrals of the Middle Ages. Intrigued by these marvels of stone and stained glass, he threw himself into the study of medieval France, an obsession that eventually led to *Mont-Saint-Michel and Chartres.*

On European tour Clarence King wore velvet suit and bought many paintings.

For his part, John Hay had no intention of abandoning Henry Adams, and the moment he began planning a Nile cruise for his first official leave, he sent word to Paris. "Mrs. Hay says you must go," he told Henry. Adams replied at once: "If Mrs. Hay says I am going to Egypt with you, you may bet your life that it is so."

On February 15, 1898, while the ambassador and his party lazed on the Nile, the American battleship *Maine* blew up in Havana harbor. By the end of April the United States was at war with Spain, and by August the hostilities had ceased. "It has been a splendid little war," Hay crowed in a note of congratulations to his friend Theodore Roosevelt of the Rough Riders. Indeed it had. With the Spanish defeat, Cuba won its independence from Spain, and the United

Amazing results:

After five years, 7 out of 10 NordicTrack owners still use their machines more than 3 times per week

The most effective aerobic exercise machine on the market.

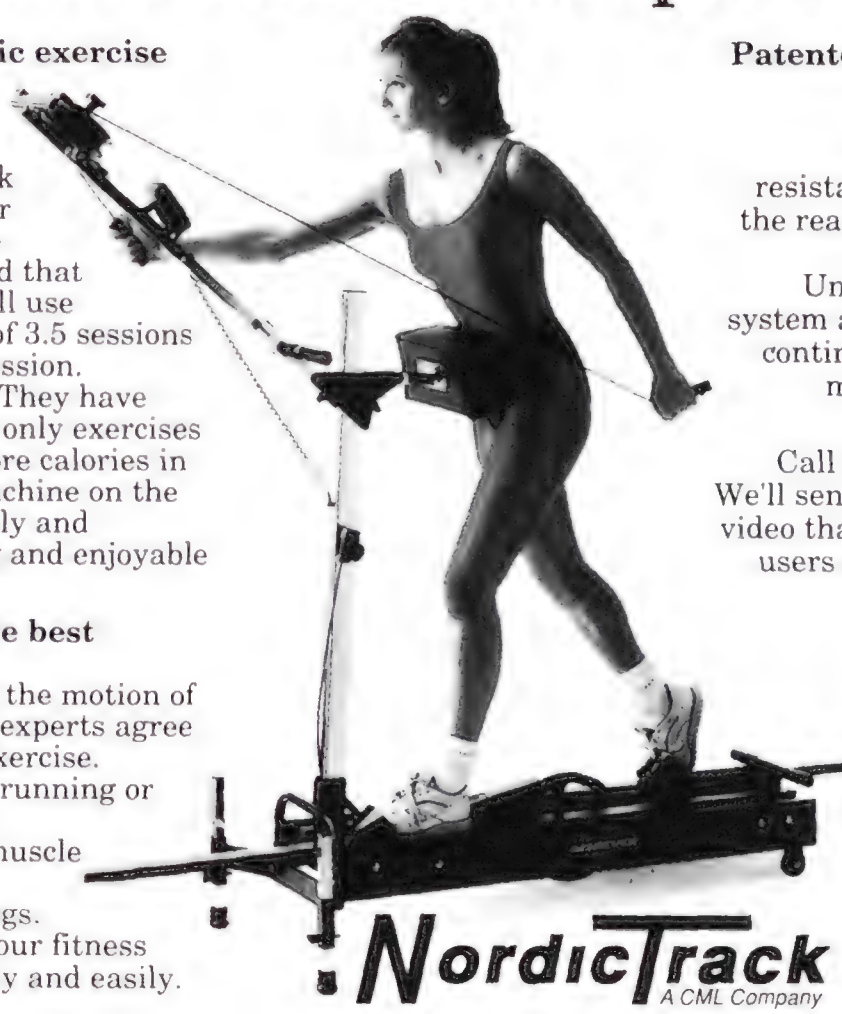
In 1988, Maritz Marketing Research conducted a survey among NordicTrack owners who had owned their machines for more than five years. Their findings showed that fully 69% of respondents still use their machines an average of 3.5 sessions per week, 25 minutes per session.

Their reason is simple. They have found that NordicTrack not only exercises more muscles and burns more calories in less time than any other machine on the market, but that it's mentally and physically more stimulating and enjoyable as well.

Cross-country skiing—the best aerobic exercise.

NordicTrack duplicates the motion of cross-country skiing, which experts agree is the best form of aerobic exercise. Better than biking, rowing, running or swimming.

It works all the major muscle groups in your body: arms, shoulders, back, stomach, legs. Which means you achieve your fitness and weight-loss goals quickly and easily.



Patented flywheel and one-way clutch mechanisms provide true cross-country ski action.

NordicTrack features proportional resistance which places primary effort on the rearward stride just like cross-country skiing.

Unlike shuffle-type ski exercisers, the system allows you to develop a rhythm and continuity of motion that makes exercise more pleasant and easier to sustain.

Discover for yourself.

Call today. Or fill out the coupon below. We'll send you a free full-color brochure and video that describe in detail why 7 out of 10 users have kept their fitness and weight-loss goals on track.

Free Brochure & Video

1-800-328-5888

(U.S. and Canada)

❑ Please send me a free brochure
❑ Also a video tape ❑ VHS ❑ BETA
Name _____
Street _____
City _____ State ___ Zip _____
Phone ( ) _____
141 Jonathan Blvd.• Chaska, MN 55318
355FO

A sampling of Clover's rarely seen portraits

Henry's father, Charles Francis Adams sr., and his wife, Abigail, disapproved of Clover—and much else.

Century magazine wanted to print Clover's portrait of historian George Bancroft. The Adamses objected.

Historian Francis Parkman, famous for field research, was crippled and nearly blind when this was taken.

Bancroft's wife, Elizabeth, who lived near Lafayette Square, admired Clover's taste in art and furnishings.

William Evarts was Secretary of State under President Hayes; John Hay served as his Assistant Secretary.

Oliver Wendell Holmes was a judge, but not yet a Supreme Court Justice, when he was photographed.

States gained possession of Puerto Rico, Guam and the Philippines.

Early in August, knowing that a preliminary armistice agreement would soon be signed, Hay headed for the English countryside to recover from a kidney ailment. Surrounded by family and friends, including Henry Adams, he soon felt restored, but his leisure came to an abrupt halt in mid-August with a cable from Washington. President McKinley wanted him to be Secretary of State. After discussing the matter with Adams, Hay accepted, dreading the burden of office but feeling it would be wrong to refuse a President's request.

Asked who would succeed him as ambassador, Hay said that if the choice were his, he would pick Henry Adams. Henry had a thorough knowledge of diplomacy, and the London mission had been almost an Adams family franchise: Henry's father, grandfather and great-grandfather had served as ministers to England. With no standing in McKinley's crowd, Henry knew he had no chance, but Hay's notion pleased him deeply. "All my life I have lived in the closest possible personal relations with men in high office," he told a friend. "Hay is the first one of them who has ever expressed a wish to have me for an associate in his responsibilities."

As Secretary of State, Hay met with mixed success. He won applause in 1899 for his Open Door Policy in China, which put the United States on an equal footing with the European powers trading there, and for the 1901 Hay-Pauncefote Treaty, which gave the United States control of the Panama Canal Zone. But his popularity in London, which he assumed would be an asset in managing U.S. relations with Britain, turned out to be a millstone. In his first round of negotiations with England for control of the Canal Zone, he failed to consult the Senate Foreign Relations Committee. The Senate retaliated by accusing him of Anglophilia and rejecting the treaty, thus forcing Hay

"How Formby's saved my secretary and my marriage."

"I refused to part with my old secretary. My wife Kate was ready to throw us both out. But I was ready with Formby's® Refinisher."

When the Larkins moved to their new house, Kate didn't want to take his secretary. So Barry took out the Formby's Furniture Refinisher. It's the only refinisher that gently removes the finish, then conditions to help prevent drying and cracking.

"The old finish was so dark and cracked it hid the grain. But as I applied the Formby's, the old varnish just dissolved. With no stripping or sanding. Once Kate saw how great the natural oak looked she was won over. She even helped me put on the new finish."

Kate told us, "We used Formby's® Poly Finish to protect our secretary. Its natural beauty shines through the hand-rubbed finish."

As the Larkins found out, it's easy to get extraordinary results from Formby's products. We've got everything for wood care projects from start to refinish, even experts to give you the benefit of our three generations of experience; call 1-800-FORMBYS, or write to Formby's Workshop, Olive Branch, MS 38654. With Formby's, doing it yourself doesn't mean doing it alone.

©1990 Thompson's & Formby.

FORMBY'S Workshop

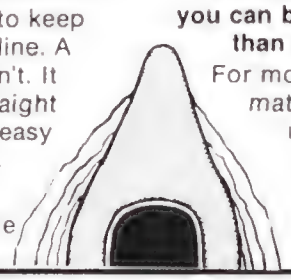
Ordinary people. Extraordinary results.

THE POKE BOAT®
IT'S EVERYTHING A CANOE ISN'T.

A canoe is tippy. A Poke Boat isn't. It's remarkably stable.

A canoe is hard to turn and difficult to keep in a straight line. A Poke Boat isn't. It stays in a straight line, yet it is easy to maneuver.

A canoe is heavy. A Poke Boat isn't.



It **weighs only 28 pounds**-built with aircraft strength.

For under $700 you can buy more than a canoe.

For more information, give us a call.

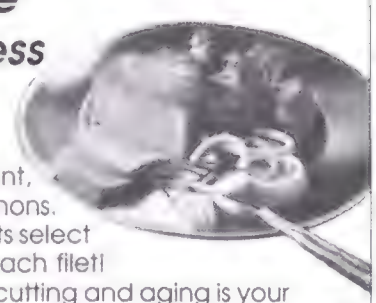
Toll free 1-800-354-0190.

LEATHER BACKPACK — RUGGED — ONLY $29.50

HISTORIC EXPLORERS of America required backpacks that were tough! Now **YOU** can enjoy the richness (smell that leather) and durability of soft, 100% leather in this modern version of the famous trail pack of yesteryear. Rich golden color. All chrome hardware. Roomy 14"x17"x5" cargo compartment plus 3 handy expandable outside pockets. 2" wide adjustable shoulder straps. Offers 1,000 uses for any outdoorsman and a touch of class for those "long hours on the trail." Send $29.50 + $3.90 delivery. Use 30 days, money back if not pleased. MasterCard & Visa accepted (phone 312-445-6166) C.O.D. require[illegible] deposit. Order today! Midwest Company, Dept L-1919, 9043 S. Western Ave., Chicago, Il. 60620. Special 2 packs for $57.90 prepaid. Our 50th year.

BONUS: ORDER NOW RECEIVE A COMPASS FREE

Introductory Offer -
NEW CUSTOMERS ONLY!
Try A Little Tenderness



Candlelight, soft music, and magnificent, aged Filet Mignons. Perfect. Experts select and prepare each filet! Their artistry in cutting and aging is your assurance of utmost enjoyment. Steaks arrive frozen. Complete satisfaction guaranteed. Introductory Offer:

#678 4 (6 oz.) Filet Mignons, 1 1/4" thick &
1 (4 oz.) Pkg. of Seasoned Butter Sauce

Reg. $49.95 ..... **$29.95**
(plus $5.50 shipping and handling)

You Save $20.00 (Limit of 2, Please) Valid in 48 States Until June 30, 1990

Phone or mail order. Use major credit card and

Call Free 1-800-228-9055

Order today or write for FREE catalog and 10% discount coupon.

Omaha Steaks International

Dept. 1466 / P.O. Box 3300 / Omaha, NE 68103

Cricket
the magazine for children

. . . is for very special children who are curious about their world, who love to read, who have adventurous minds and active imaginations . . .
children just like yours!

"A fine literary magazine for children, this monthly has no living peers Unfortunate, indeed, are those who pass through the years of 6 to 12 unacquainted with CRICKET."
—BOOKLIST

$14.95 for an EIGHT-ISSUE TRIAL subscription. Send no money. We will bill you later. *Save over $15.00 off the regular twelve-issue price!* Order now by calling toll free or by sending us the coupon below.

Name _____
Address _____
City, State, Zip _____

1-800-BUG PALS (1-800-284-7257)
CRICKET, Box 52933, Boulder, CO 80322

5SMR8

to scrap a year's work and start over.

Adams watched in dismay, unhappy for Hay and for himself as he considered what two decades across from the White House had done to his own character. As he told an English friend, "I have grown so used to playing the spider, and squatting in silence in the middle of this Washington web, and I have seen so many flies and other insects caught and devoured in its meshes, that I have now a little the sense of being a sort of ugly, bloated, purplish-blue, and highly venomous, hairy tarantula which catches and devours Presidents, senators, diplomats, congressmen and cabinet officers." Now his friend Hay was "caught in the trap," he added, "and, to my infinite regret, I have to make a meal of him as of the rest."

Still delightful and diverting despite his difficulties, Clarence King occasionally turned up on Lafayette Square, dreaming as always of bonanzas and the day he would return the $120,000 he now owed Hay. (It was a mark of his spirit that King often signed his letters to Hay "Unremittingly yours.") He worked unflaggingly to support his mother and his subterranean family. Hurrying from one geological consulting assignment to another, he longed to be with Ada. "I can see your dear face every night when I lay my head on the pillow and my prayers go up to Heaven for you and the little ones," he wrote from one of his trips. "Lonely seems my bed! Lonely is my pillow!"

He made his last visit to Washington in the spring of 1901, just before leaving for the Arizona desert. He hoped the dry air would cure the tuberculosis he had developed. He died on Christmas Eve, two weeks before his 60th birthday. For the Hays it was a dismal end to a dismal year. In June their 23-year-old son had fallen to his death from a hotel window, and in September President McKinley had been assassinated.

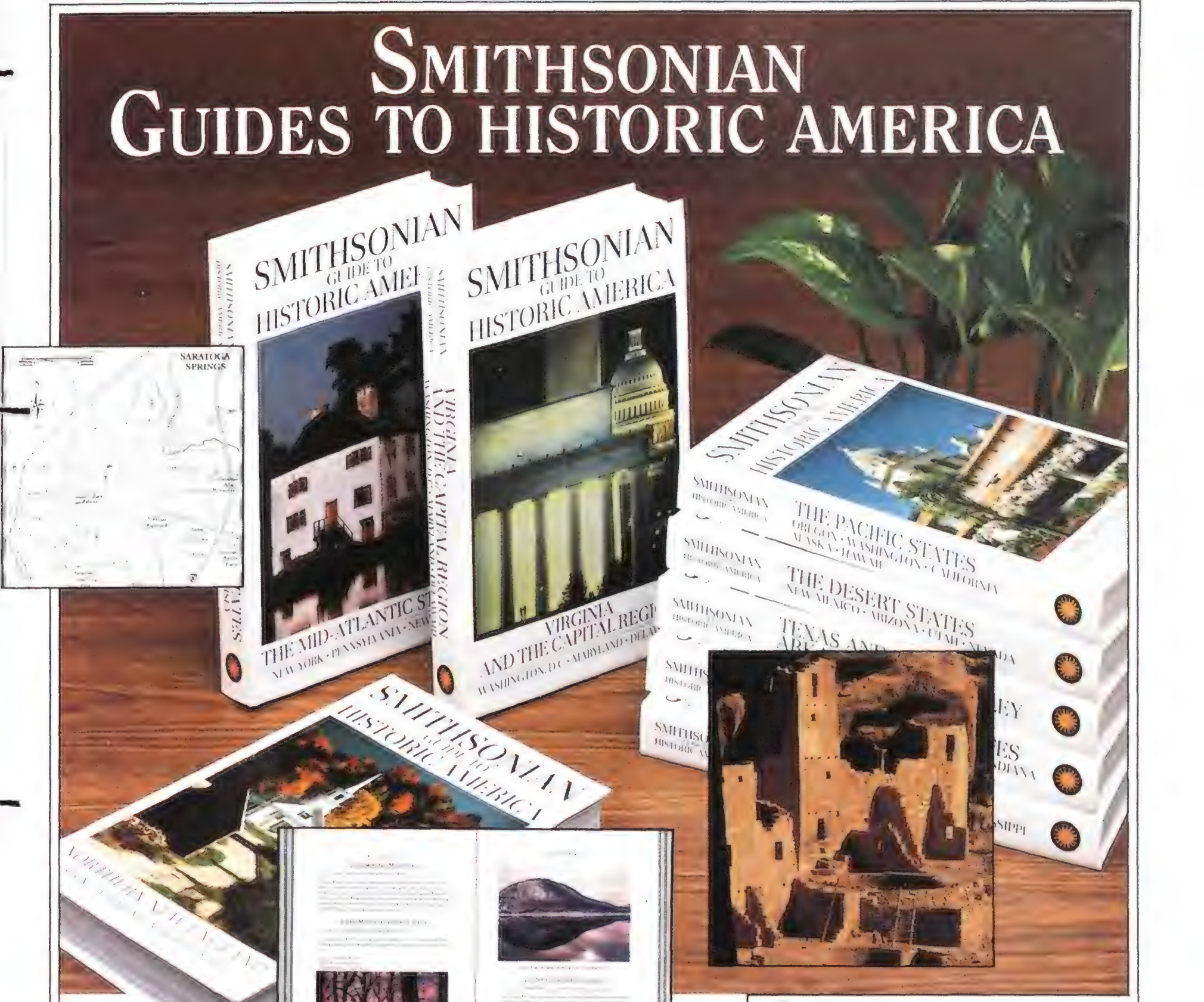
Shortly before King died, he revealed his identity to Ada Todd but still could not find the courage to confide the story to Hay and Adams. If it was disapproval he feared, he sadly underestimated his friends. When they learned about Ada soon after his death, they were unperturbed. "We were his slaves, and he was good to us," Adams said. "He was the ideal companion of our lives." Hay became Ada's anonymous benefactor, setting up a trust fund to provide her with a small income.

Ada Todd was King's secret wife; she thought he was a railroad porter.

Grieving, and fatigued by his unending feud with the Senate, Hay talked of resigning from the Cabinet but settled for spending less time at his State Department office. He came home at 1 in the afternoon, read dispatches and wrote until 4:30, then rang Henry's bell. They took a walk and had tea with Clara, the Five of Hearts now reduced to three.

By 1902, Henry was convinced that his day—and Hay's—had passed. After dining at the White House with the Hays and the bumptious President Theodore Roosevelt and Mrs. Roosevelt, Adams told a friend that he and Hay had been "shoved up to a distinct seniority; we are sages. I felt it not only in Hay's manner, but in Roosevelt's too, and it is my creed now that

SMITHSONIAN GUIDES TO HISTORIC AMERICA



Experience the drama of colorful times past and discover our nation's wealth of historic treasures . . . in our fascinating new series of books: *The Smithsonian Guides To Historic America.*

James Yenckel of the *Washington Post* describes the Guides as, ". . . remarkable books—intelligently conceived, beautifully executed and wonderfully informative." Each fascinating volume, organized geographically, brings you up to 488 pages of lively, informative text, more than 250 full-color photographs, and specially commissioned maps bound in a flexible laminated-paper cover.

To order the first volume in the series, the *Smithsonian Guide to Virginia and the Capital Region,* for a FREE 15-day examination period, simply return the coupon. If the book fails to please you in any way, just return it and owe nothing. If you decide to keep this introductory volume, simply honor its attached invoice for $17.95 (The Smithsonian member's price is $16.95) plus $2.28 postage and handling.

You'll then receive future volumes, approximately one every other month. Each will come with the same 15-day free examination privilege. Keep only those volumes you want. There is no minimum number you must buy. And you may cancel at anytime just by notifying us.

(Please allow 4–6 weeks for delivery)

0060

☐ Yes! I'd like to order *The Smithsonian Guide to Virginia and the Capital Region* for a 15-day free examination. If I am not completely satisfied, I may return it and owe nothing. If I choose to keep it, I will then receive future volumes approximately one every other month. Each will come with the same 15-day free examination privilege.

I will pay only $17.95 plus $2.28 postage and handling for each volume that I choose to keep. (The special price for Smithsonian members is $16.95 plus postage and handling.) There is no minimum number to buy. And I may cancel at any time just by notifying you.

Signature: _____

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

☐ I am a Smithsonian member.

The Smithsonian Guides to Historic America
P.O. Box 11434
Des Moines, IA 50380-1434

S01 S02

my generation had better scuttle gracefully, and leave Theodore to surround himself with his own rough-riders." The 20th century, in which Roosevelt gloried, terrified Henry Adams: "This huge, great ghastly automobile of a country seems just about to roll over us all, and squash us into one enormous mince-pie."

After the election of 1904, Hay thought the President would name a new Secretary of State, but when he read in the newspapers that Roosevelt expected him to stay on, he did not protest. He died in 1905, a few months after the new administration began, at the age of 66.

"Hay's death strands me," Adams mourned. "I am now left quite alone, with no thought or wish except to follow as quietly and easily as possible." Sensing the time had come for a summing up, he helped Clara edit John's letters and diaries for publication, and he put the final touches on his own memoir, *The Education of Henry Adams*. One of the great autobiographies, the book is nevertheless as remarkable for what it doesn't say as for what it does: though King and the Hays appear, there is not a word about Clover.

Chilled by the restraint and cynicism of *The Education*, Clara urged Henry to turn to the Bible for consolation. "You have said that all the good in your life has come from women," she reminded him, without directly challenging the book's most peculiar silence. "Will you not listen to the least among your women friends?" Henry replied that he *had* pored over the Bible, to no avail.

In 1908, hoping to live near her only sister, Clara began building a grand house in Cleveland (now part of the museums of the Western Reserve Historical Society). Her sister died before the house was finished, and Clara never lived there. She died in 1914, at 64.

Between frequent laments that he had lived too long, Henry Adams had a thoroughly satisfying old age. In 1912, after recovering from a stroke, he hired a young woman named Aileen Tone as a live-in secretary-companion. Told of Henry's interest in the Middle Ages, she had arrived bearing a volume of medieval French songs. When she sang a few, Henry, charmed by melodies that seemed to him to end "with their tails in the air," promptly purchased a Steinway and sent to France for more songs. At 74, he had acquired a new passion.

Aileen also took Henry for regular visits to Clover's grave, which was marked with a haunting bronze figure sculpted by Augustus Saint-Gaudens. For 30 years, no one had dared to mention Clover in Henry's presence, but after Aileen found the courage to ask him about his wife, he spoke of her happily and often.

In March 1918, a few weeks after Henry's 80th birthday, the German Army stunned the world with Big Bertha, an artillery piece capable of shelling Paris from 75 miles away. "Life has become intolerable," Henry declared. "This is no world for an old man to live in when the Germans can shoot to the moon." He died before the month was out.

Years before, reflecting on the disappointments of his generation, Henry had decided that life was a bafflement. How ironic, he thought. He and Hay had spent years and vast sums writing histories no one cared to read; his friends Saint-Gaudens, La Farge and Richardson—the best artists of their day—had failed to win lasting renown. After his own lifelong quest for knowledge he still felt supremely, irredeemably ignorant.

Casting about for the organizing principle of such a universe, Adams settled on chaos. What besides luck—or chance or fate or whatever one called it— explained how a man like John Hay, who cared so little for success, could rise to one of the highest offices in the land while the drive and brilliance of Clarence King ended in ruin? Henry found comfort only in the thought of his friends, and he wished "they might be allowed to return together for a holiday, to see the mistakes of their own lives made clear in the light of the mistakes of their successors; perhaps then . . . they would find a world that sensitive and timid natures could regard without a shudder." A world, in short, like the world he'd come to know—quite by chance—in the company of the Five of Hearts.

Watercolor of Henry in his study was done by niece Mabel Hooper La Farge about 1894. He tore it up (white lines) but saved the pieces.

Coming to PBS television

The Metropolitan Opera Presents

Wagner's epic masterpiece

The Ring of the Nibelung

"...will stand as the decade's finest achievement by the Met and its artistic director."

Donal Henahan, THE NEW YORK TIMES.

"Using every weapon in its formidable technological arsenal, the Met has produced a dazzling version of the tetralogy."

Katrine Ames, NEWSWEEK

For 50 seasons with the Met, Texaco has been proud to bring you broadcasts of some of the greatest music ever composed. But we feel a heightened sense of pride in bringing you this important television premiere. Now, for the first time, you can experience Wagner's masterpiece on four consecutive evenings —just as the composer intended.

DAS RHEINGOLD — Monday, June 18
DIE WALKÜRE — Tuesday, June 19
SIEGFRIED — Wednesday, June 20
GÖTTERDÄMMERUNG — Thursday, June 21

Presented with English subtitles.
Check local listings for time and channel.

TEXACO

Want to brush up on a foreign language?

With Audio-Forum's intermediate and advanced materials, it's easy to maintain and sharpen your foreign language skills.

Besides intermediate and advanced audio-cassette courses—most developed for the U.S. State Dept.—we offer foreign-language mystery dramas, dialogs recorded in Paris, games, music, and many other helpful materials. And if you want to learn a *new* language, we have beginning courses for adults and for children.

We offer introductory and advanced materials in most of the world's languages: French, German, Spanish, Italian, Japanese, Mandarin, Greek, Russian, Portuguese, Korean, Norwegian, Swedish, and many others.

Call 1-800-243-1234 for FREE 32-p. catalog, or write:

AUDIO-FORUM

Room M615, 96 Broad Street,
Guilford, CT 06437 (203) 453-9794

A CUT ABOVE.

The ALL NEW 1990 Lindal Planbook is the largest ever offered! And it's all you need to make your custom home a cut above in every detail. Custom plans, design tips, planning grids and over 500 color photographs for just $15.00! And get the video for just $19.95 more. Write, or call toll free and use MasterCard or Visa.

1-800-426-0536

Lindal Cedar Homes

P.O. Box 24426, Dept. BC6, Seattle, WA 98124. (206) 725-0900.
10880 Dyke Road, Dept. BC6, Surrey, B.C., Canada V3V 7P4.

Book reviews

Abraham Lincoln: Speeches and Writings (2 vols.)
Edited by Don E. Fehrenbacher
Library of America, $35 per volume

The first entry in this two-volume collection of Abraham Lincoln's speeches and writings is the 23-year-old infant politician's 1832 declaration to the "People of Sangamo County," explaining to the voters he hopes will send him to the Illinois General Assembly his "sentiments with regard to local affairs." His statement is proper, intelligent, sincere and oh so solemn: "I am young and unknown to many of you. I was born and have ever remained in the most humble walks of life." He finished 8th in a field of 13.

By 1836—the date of the next pieces printed here—he has been elected assemblyman and has begun to work comfortably with politics on a state level. More important, his style has changed. Either someone told him to be himself or he has become himself. He is not less serious about issues, but he has learned to be funny on occasion and has discovered an ironic tone that lets him make himself the butt of many of his remarks. This is the voice of Lincoln that informs the rest of the collection.

An example of Lincoln at his playfully savage best came during the Presidential campaign of 1848 when he made a speech in favor of Zachary Taylor on the floor of the Congress when that floor was not so circumspect about direct political speeches. He reduces to slapstick the war record of Taylor's opponent, Gen. Lewis Cass, and does so by making comparisons with his own service in the Black Hawk War. I laughed out loud, which is not my customary response to political speeches unless I am laughing at, not with, the speaker.

This is the public Lincoln, the political Lincoln. There is very little of the private Lincoln in this collection—a few letters to his friends Joshua F. Speed and John T. Stuart, which are often as much about public issues as about his private life; a few courting letters to Mary Owens; later in the volumes, a handful of messages to his wife ("Will you be a *good girl* in all things . . . ?" he wrote from Washington in 1848, hinting at the marital difficulties that later historians like to worry over). "I have been sick ever since my arrival here," he wrote Mary Owens from Vandalia in 1836, and in two letters to Stuart in 1841 he complained about "the deplorable state of my mind," rare indications of the severe depression that often disabled him in the early years of his career. For the most part, private pain appears only obliquely later in the collection. "A domestic affliction, of which doubtless you are informed," he began a letter in 1862, explaining his delay in acknowledging a communication from New England Quakers; his son Willie had recently died.

Nor is there much indication of his business life. Although he became a lawyer with reputation enough to be put on retainer by the Illinois Central Railroad, there are only a few letters here on his legal practice. For the rest, there is a fine portrait of Lincoln as candidate, officeholder and interested bystander, speaking out on public questions and carrying on a vigorous correspondence with his political friends and enemies all across the country.

Lincoln was somewhat inactive between 1849, when he finished his Congressional term, and 1854, when he returned to the public platforms. "I was losing interest in politics, when the repeal of the Missouri Compromise aroused me again," he wrote in an autobiographical statement in 1859. "What I have done since then is pretty well known." What he had done was to help found the Illinois Republican Party (1856), play an important role in the first national Republican Convention and oppose Stephen A. Douglas for the U.S. Senate in 1858, a campaign that produced the celebrated Lincoln-Douglas debates. These fill more than a third of the first volume.

Reading the debates today is an odd experience, for the repetition, the wor-

A VANISHING BREED OF WESTERN ARTIST CREATES A MASTERPIECE IN BRONZE.

SHOWN MUCH SMALLER THAN ACTUAL SIZE.

SOLID HOT-CAST BRONZE. AN IMPRESSIVE 17″ IN HEIGHT, INCLUDING THE HANDSOME HARDWOOD BASE.

As dawn breaks over the far horizon, a medicine man of the Crow nation holds aloft the buffalo skull—raising a solemn prayer. And this dramatic moment is captured in a monumental American masterpiece in solid hot-cast bronze—hand-finished to a classic patina.

Created by Buck McCain, one of the few living masters of the Western bronze. Hailed by critics for his unerring accuracy—the result of growing up with American Indians. And this bronze is available exclusively from The Franklin Mint at the issue price of $575.

PRAYER TO THE HEALING SPIRIT

Please mail by June 30, 1990.

The Franklin Mint
Franklin Center, Pennsylvania 19091

Please enter my order for PRAYER TO THE HEALING SPIRIT. I need send no money now. Bill me for my deposit of $57.50* when my imported sculpture is ready for shipment, and for the balance in nine equal monthly installments of $57.50* after shipment.

**Plus my state sales tax.*

Signature _____
ALL APPLICATIONS ARE SUBJECT TO ACCEPTANCE

Name _____
PLEASE PRINT CLEARLY

Address _____

City _____ State _____ Zip _____

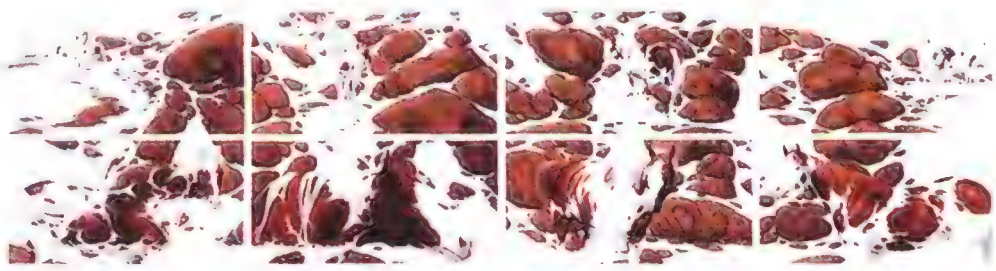
© 1990 FM

11898-68

DISCOVER THE MAGIC OF BEV DOOLITTLE

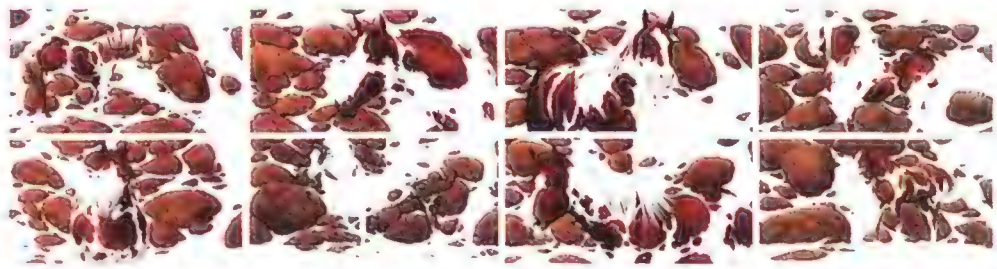
And discover for yourself why Bev Doolittle's camouflage art has made her today's most sought after artist in print.

From The Greenwich Workshop, North America's leading fine art publisher, comes a unique new experience in the art of collecting — *Hide and Seek*. The magic of *Hide and Seek* is offered in a limited edition subscription suite of seven dramatic pieces.



THE SUBSCRIPTION SUITE FEATURES:

- A signed and numbered composite print of 24 camouflage images spelling *Hide and Seek*
- And a folio of six fine art limited edition prints specially selected from the composite print and presented in a hardcover portfolio.
- Printed on 100% cotton fiber paper with images debossed.



AVAILABLE ONLY THROUGH AUTHORIZED GREENWICH WORKSHOP DEALERS

We invite you to call toll-free or write for a free full-color brochure with complete information on this exceptional limited edition offering and for the name of The Greenwich Workshop dealer serving your area. See for yourself why *Hide and Seek* is so special! (Subject to Availability)

IN THE U.S. (800) 426-6858 • IN CANADA (800) 263-4001

THE GREENWICH WORKSHOP, INC.
30 Lindeman Drive, Trumbull, CT. 06611 • (203) 371-6568

THE GREENWICH WORKSHOP, LTD.
3781 Victoria Park Avenue, Unit 6, Scarborough, ONT. M1W 3K5
(416) 490-8342

rying and reworrying of minor points, would be fatal in the age of television overexposure. Yet at the time, the speeches were widely known, published immediately in partisan newspapers, and crowds still came to see and hear the antagonists. The marvelous sense of occasion is apparent, the feeling that, as Lincoln said in the Sixth Debate, "they were the successive acts of a drama." Since the newspapers report audience responses, we get to hear listeners shout, "Yes, yes, Hit him again!" or, my favorite, from a Douglas supporter, "Hit him on the woolly side."

In the account of the Third Debate, there are parenthetic descriptions which say that Lincoln hides his face in his hands, looks miserable, groans during Douglas' speech. According to the editor of these volumes, Lincoln deleted these sentences when he prepared his debate scrapbook. He may have done so because he considered them the invention of the *Chicago Times*, the Democratic paper from which the Douglas speech was reprinted, or because he thought the occasion too important for such shenanigans. I am tempted to accept the reactions as genuine and as evidence that Lincoln, a platform genius, understood the value of upstaging the opposing speaker.

If the debates were in some sense a game, they were a serious game that Lincoln won even though he lost the election. By the end of 1858, he had become a national figure, a strong voice for the exclusion of slavery from the territories, a prime candidate for the Republican nomination for President.

Lincoln's relation to the slavery question is a complex one. Never an abolitionist, he upheld slavery in the existing slave states and the fugitive slave law. Politically a constitutionalist, personally he abhorred the institution. Returning from a visit with Joshua Speed's family in Kentucky in 1841, he wrote Joshua's sister Mary a letter with a graphic and frightening description of slaves chained on the steamboat heading South. Then, as though he did not want to upset the young woman too much, he softened the picture by remarking that "they were the most cheerful and apparantly happy creatures on board" and suggested that God "renders the worst of human conditions tolerable." Years later (1855), in a letter to Speed, he recalled the event and said, "That sight was a continual torment to me."

At about the same time, in another

THE SOUNDS OF SILENCE

Fedders room air conditioners. The art of quiet. From lightweight "Pick-up" portables to large capacity models - in cool only or heat/cool styles you can install in any window or through any wall - Fedders has the quiet, quality air conditioner just right for you. For the name of a Fedders dealer near you, call us at 217/342-3901.

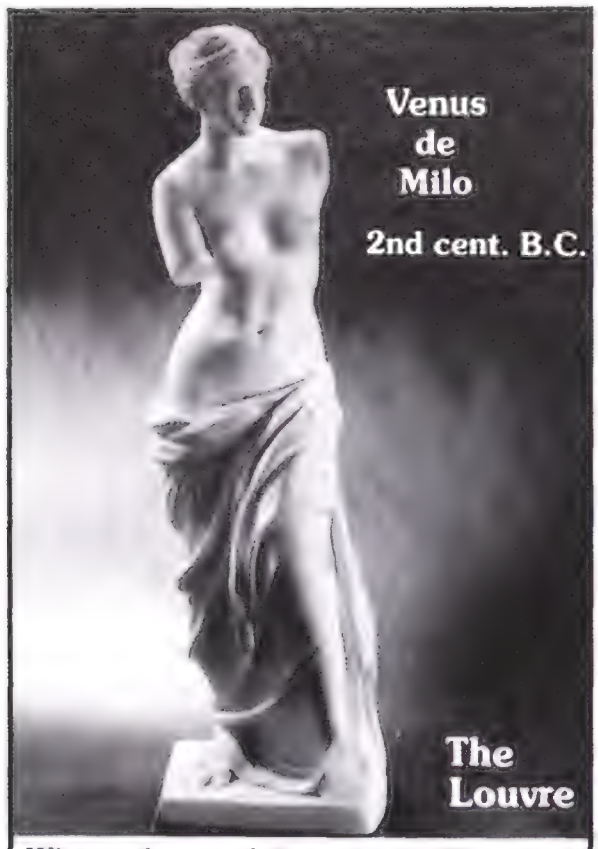
You can't do better than a Fedders.

letter, he speculated, "Can we, as a nation, continue together *permanently—forever*—half slave, and half free?" This question would go through various permutations to emerge in 1858 as his famous "House Divided" speech.

In the course of the debates, Douglas began to sound more proslavery than he probably was (Lincoln would say later, "He never lets the logic of principle, displace the logic of success") and Lincoln more abolitionist. Certainly the South expected the worst of him and tried to leave home after his election to the Presidency. His Presidential writings, which fill most of the second volume, show him circling the idea of emancipation, trying to hold onto the marginal support for the Union cause, until finally, on January 1, 1863, he issued the Emancipation Proclamation on the grounds of military necessity, not morality. Yet, there was morality in the practicality. In the Second Inaugural Address, reworking a phrase he had used several times before, he said, "It may seem strange that any men should dare to ask a just God's assistance in wringing their bread from the sweat of other men's faces. . . ."

The second volume is the more interesting because it shows Lincoln in his day-to-day struggle to preserve the Union. We see him suggesting (never ordering) specific military actions, trying to win new friends to the cause without losing old ones, quieting the quarrels within his administration, being firm when he had to be, compassionate when he could ("trying to evade the butchering business," as he said in an explanation of his commuting a death sentence). There are emotional high points, most of them already familiar (the Gettysburg Address, the Second Inaugural), but for the most part his Presidential prose is simple, straightforward and eminently sensible.

Only occasionally, when his exasperation gets the better of him, does the ironic Lincoln who opened this review raise his head. Gen. George B. McClellan, whose dilatoriness maddened Lincoln, is on the receiving end of several well-aimed barbs, but one of the neater examples went to Gen. Irvin McDowell: "You say Gen. [John A.] Geary's scouts report that they find no enemy this side of the Blue Ridge. Neither do I. Have *they* been *to* the Blue Ridge looking for them?" Such turns of phrase delight me, but there is, unsurprisingly, a great

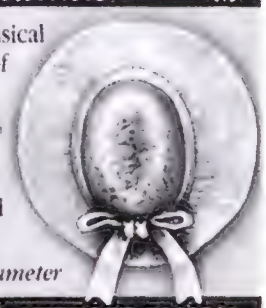


What a bargain! Found in 1820 on the island of Melos. France bought the lovely lady for 12,000 Francs. Now they won't sell her but we have reproductions of her marvelous beauty. Handcrafted from bonded marble with alabaster base. 10"...$68 ppd; 16½"...$168 ppd; 26"...$498 ppd; 34"...$1123 ppd. Check VISA, MC. Unqualified guarantee. **112 page artbook color catalog $6. America's largest collection of museum reproductions.**

ELEGANZA LTD. *Importers of Fine Statuary*
Magnolia Village • 3217 W. Smith #376
Seattle, WA • 206/283-0609

Breakell Silversmiths

STRAW HAT PIN, this whimsical straw hat is a lovely reminder of solstice, summer and sun! In Sterling silver $40, in 14K gold, $682. In RI add 6% tax. Add $3.50 handling. VISA/AMEX/MC. Call 1-800-767-6411. Send $2 for our new color catalog.

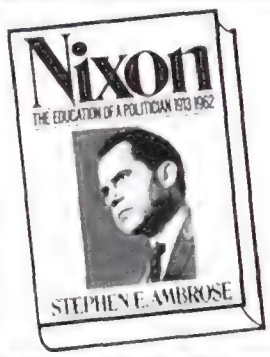


Actual Size 1½" diameter

69 MILL STREET, DEPT. S06, NEWPORT, RI 02840

BOOKS ON TAPE®

World's Largest Selection of Audio Books



- Best Sellers on Cassette
- Full-length Readings
- Call for Free Brochure

Box 7900-S, Newport Beach, CA 92658

Reg. U.S. Pat. & T.M. Off.

(800) 626-3333

MASCO HOUSE
Scholz Design

To Order Scholz Catalog of over 125 Designs including variations of MASCO House, call 1-800-627-6115 Ext. 200

SCHOLZ DESIGN
3131 Executive Pkwy, Toledo, (419) 531-1601

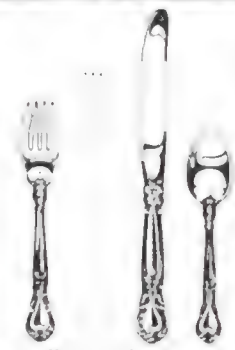
SUNDIALS
WEATHERVANES
WEATHER INSTRUMENTS
Free Catalog

Wind & Weather

P. O. BOX 2320-SM, Mendocino, CA 95460 (707) 937-0323

MISSING A PIECE OF YOUR PATTERN?

Now you can replace pieces or add to your sterling silver collection at up to 75% off retail prices. We specialize in new and used flatware and holloware, with over a thousand patterns in stock. Call or write for a free inventory of your sterling. *(We also buy sterling, with a careful appraisal for maximum value.)*



Pattern shown
Chantilly by Gorham

Beverly Bremer
SILVER SHOP

3164 Peachtree Rd. NE, Dept. SM
Phone (404) 261-4009

Atlanta, GA 30305
Hours 10-5, Mon.-Sat.

Send for FREE dolphins poster and catalog
141 Blackberry Inn G Weaverville, NC 28787

CLASSIC T-SHIRTS!
Beethoven, Confucius, Da Vinci, Jung, J.F.K., Mozart, Shakespeare, Cheshire Cat, Twain, Darwin, Van Gogh, Gandhi, Nietzsche, Poe, Thoreau, Austen, Sherlock Holmes, others
T-Shirt: (white or lt. blue) $12.75, 4/$46
Sweatshirt: (white or grey) $23, 2/$44
Sizes: S, M, L, XL. **Ship:** $2.25 per order.
Illustrated brochure: 75¢
Historical Products, Box 220 SV Cambridge, MA 02238

NORTHSTAR'S EUROPEAN BATTLEFIELD TOURS
Tours for militaria collectors, veterans, history buffs from the most experienced American military tour operator in Europe.
Write NORTHSTAR TOURS
Box 810, Lakeville, MN 55044-0810

Sterling Silver We Buy & Sell
Kirk Stieff specialists
Estate Flatware & Hollowware
for Free Price List 1-800-441-2520
Michael A. Merrill, Inc.
908 York Rd. Baltimore, MD 21204

• AUTHENTIC EGYPTIAN PAPYRUS PAINTINGS, SALE $17 (8x12") up, many scenes. (To buy now: 20% off & No ship)
• Your name in Hieroglyphic w/Royal Cartouche, Solid Gold, Sale $129
• Lucky Scarabs, Papyrus, Statues, Jewelry
• FREE Brochures Egyptian Gifts, Box 75501, L.A., Ca 90075

日本刀 JAPANESE SWORDS
For Free Evaluation Sheet
TOLL FREE 800-435-5119
$200 $250,000 CASH PAID
French Art Glass (Galle, Daum), Tiffany Lamps Also Wanted
David E. J. Pepin—Member NBTHK, Tokyo, Japan
Dept. SI, P.O. Box 354, Grant Park, IL 60940

actual size
OWL PENDANT
Sterling—$45; 14K—$250
18" neckchain is included
velvet box, satisf. guaranteed
Vern Wayne Pond
609 E. Market St., #103
Charlottesville, VA 22901
VISA/MC/AMEX 1-800-284-8376

THE ULTIMATE CHAIR
for back relief and relaxation!
. . .and 25 other products for a healthy back!

Office Model Available!
BackSaver FREE 14 page catalog 1-800-251-2225 or write
Jeffrey Ave., Dept. SM, Holliston, MA 01746 In MA 508-429-5940

deal more to *Speeches and Writings.* An unusual but welcome addition to the Library of America.

Gerald Weales
Emeritus Professor of English
University of Pennsylvania

The Hone & Strong Diaries of Old Manhattan
Edited by Louis Auchincloss
Abbeville Press, $35

In 1864, when George Templeton Strong heard he was favored to succeed Charles King as president of Columbia College, he confided the following to his diary: "I incline to think a majority of the board would put me into that place, marvellous as such action would be, provided I would consent to emigrate from 74 East Twenty-first Street to a frontier settlement in the 'President's House' on Forty-ninth Street, where Ellie would be a mile away from all her friends, and the three boys as far from their schools, and all four in peril of typhus and malarial fever, as the vacant blocks of that region are dug up for improvement during the next ten years. That is among the things I will not do on any terms."

Such was the city of New York, home to this distinguished lawyer and unflagging diarist.

The 50-year saga of New York from 1826, when it was a settlement of fewer than 200,000, to its splendor as a financial and cultural center in 1875 is the stuff of this volume, and a dandy romp through time it is. The tale comes to us from the diaries of two of the city's foremost citizens: Philip Hone (1780-1851), a businessman, collector of art and literature and founding member of the Union Club, who commenced his diary in 1826 after serving the city as mayor for one year; and Strong (1820-1875), vestryman of Trinity Church, treasurer of the Sanitary Commission created during the Civil War, scholar of classical music and a founder of the Union League Club.

Hone and Strong were much alike in their passions, prejudices and genteel complaints, as well as in their beguiling zest for life. They were ardent about their city and chronicled its doings and personages with the bounce of cub reporters. Our technocratic language would be much enlivened by restoring to fashion such words as "scamp," "frock," "libertine," "ruffian" and "blackguard," which pepper these diaries.

VIXEN HILL GAZEBOS

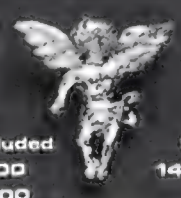
Discover our wide selection of architecturally authentic gazebos, pre-engineered for easy assembly by the non-carpenter. Send $3 for our 20-page color catalog.
Vixen Hill, Dept. SM-0 Elverson, PA 19520. 215-286-0909.

Saber-Toothed Cat
Unique Gifts of the Past from Skullduggery
Send for your catalog of Natural History gifts.
Skullduggery, Inc.
621 South B Street
Department SFO
Tustin, CA 92680
or call (800) 336-7745

Tyrannosaurus rex Tooth

CUSTOM CASES
Oak – Cherry
with Glass
Removable Top
& Back Panels
Also
Cases w/ Shelves
Wall Hanging Cases
CUSTOM DISPLAY
11200 Bybee St.
Silver Spring, MD 20902
1-800-842-5786
1-301-649-4247
Visa, Master Card

GUARDIAN ANGEL
Pendant or Tac Pin
Actual Size **Gift Boxed**



Pendant
18" Necklace Included
Sterling—$35.00
14K Gold—$195.00
Tac Pin
Sterling—$30.00
14K Gold—$165.00
To watch over you or someone you love.
PPD
Visa/MC
1-800/558-3007
In Wisconsin call:
414/466-0829
Royal Castings of America
P.O. Box 09991
Milwaukee, WI 53209

THE
METROPOLITAN
MUSEUM OF ART

Christmas Catalogue

Do your Christmas shopping at home with our new 144-page full-color catalogue of unusual and distinguished presents, *the majority of which are available only from the Museum*. The many wonderful gifts include jewelry, decorative works of art, sculpture, Christmas cards and Christmas ornaments, note cards, posters, and prize-winning art books priced from less than $10 to more than $100. There is also a special selection of presents for children.

The new Christmas catalogue will be mailed to you. Please send $1.00 to cover postage.

THE METROPOLITAN MUSEUM OF ART
255 Gracie Station, New York, NY 10028

1031

Name _____

Address _____ Apt. # _____

City _____ State _____ Zip _____

They were good men, zealous patriots and defenders of an undivided Union, one in their distaste for the evils of corruption, enslavement and exploitation, yet they remained men of their age and station, members of the propertied upper class, who disdained Southerners and immigrants, particularly the Irish Catholics. They were wary of change. "A fine large steamboat was launched yesterday," wrote Hone on January 31, 1837. "It would be presumptuous to express a doubt as to the success of any new experiments in the mechanical arts in our days of successful enterprise, but I do presume to doubt, for I cannot conceive of an improvement in safety or convenience over such noble craft as the *England*. . . ." From Strong's pen on October 9, 1869: "Application from three infatuated young women for admission to [Columbia] Law School. No woman shall degrade herself by practising law, in New York especially, if I can save her." Lament though they did the breaking up of an ordered society of the decorous and propertied, their sense of justice and civic responsibility allowed them to accept, if not enjoy, a world that was slipping into the control of their cruder and more-assertive fellow citizens.

It is fitting that our guide through the diaries—enhanced by splendidly reproduced illustrations and Currier & Ives prints—is Louis Auchincloss, whose novels already have introduced us to the Old New York families of his ancestry, and who is a lineal descendant of Philip Hone's brother John. One imagines it could only please Hone and Strong to see their writing in his adroit and knowledgeable hands.

Beverly Gary Kempton
New York writer

Wonderful Life: The Burgess Shale and the Nature of History
Stephen Jay Gould
W. W. Norton, $19.95

The fossils of the Burgess Shale are easily overlooked. Tourists who drive west to Vancouver—my family included, last summer—speed past a single sign for Yoho Provincial Park and its prehistoric treasures. Within the park, the mountainside quarry and its fossil organisms are unmarked. Who, in fact, would be interested in a few bizarre sea creatures, 530 million years old, all but one only inches in length?

Paleontologists, geologists, evolution-

The quick and easy way to learn a foreign language!

Each program comes with two 45-minute cassettes and a convenient phrase dictionary in a compact, 6" × 7" waterproof vinyl case.

ONLY **$14.95** each

Based on the U.S. Military "Speed-up" Method of Language Learning

Programmed for Rapid Learning!

It's been scientifically proven that we remember words we *hear* better than words we see. That's why you'll find the two audiocassettes in each Language / 30 package more useful than all the language books money can buy. Just start listening to the tapes, repeat the foreign phrases a few times and, believe it or not, you'll begin speaking like a native. It's that simple!

Remember, Language / 30 is a learning tool that *works*. It incorporates the "speed-up" method of language learning—the same method used to train U.S. government personnel who work overseas.

With Language/30, you can practice your target language anytime, anywhere. You won't have to set aside hours just for language study. You can listen to Language / 30 while you're getting dressed, eating, driving to work, or even jogging. Whether you're studying French, Russian, Swahili, or any of the other 28 languages listed below, you'll improve your speaking fluency and listening comprehension *each time* you play the Language/30 tapes.

Speak with the Ease of a Native

Each Language/30 program features native voices speaking the most important and commonly used conversational phrases. You'll learn all the words you need to know for greetings, introductions, requests, and general conversations in hotels, restaurants, stores, theaters, and other places. And world-renowned linguist Charles Berlitz, explains the social customs and etiquette of the country.

So, whether you're going abroad for a short trip or an extended stay, you'll find that the fluency you've gained from Language/30 will make your visit easier, more pleasant, and more enriching. Instead of being a "stranger in a strange land," you'll be able to converse freely with the natives in their own language.

Which of these 33 languages would you like to speak?

1232628. Arabic	1429232. Irish	1232800. Spanish
1232636. Chinese	1232727. Italian	1232818. Swahili
1232644. Danish	1232735. Japanese	1232826. Swedish
1232651. Dutch	1232743. Korean	1232834. Tagalog (Filipino)
1366665. Finnish	1429224. Latin	
1232669. French	1232750. Norwegian	1363316. Thai
1232677. German	1232768. Persian	1232842. Turkish
1232685. Greek	1300375. Polish	1232859. Vietnamese
1232693. Hebrew	1232776. Portuguese	1516541. Yiddish
1232701. Hindi	1232784. Russian	1232867. English for Spanish Speakers
1232719. Indonesian	1232792. Serbo-Croatian	1641653. Hungarian
1641646. Czechoslovakian		

Barnes & Noble Unconditional Guarantee

You must be completely satisfied with every item you order from Barnes & Noble by mail, or you may return it to us, for a full refund.

CREDIT CARD CUSTOMERS CALL TOLL FREE
1-800-242-6657 24 HOURS 7 DAYS A WEEK

Barnes & Noble
Booksellers Since 1873

DEPT. T118, 126 FIFTH AVE., NY, NY 10011

ONLY **$14.95** each

ITEM #	QTY.	TOTAL
Merchandise Total		
For deliveries to MA, PA, NY, NJ, MN and CA: add applicable sales tax		
Add $1.75 per tape ordered for Shipping & Insurance		
ORDER TOTAL		

METHOD OF PAYMENT

☐ Check or Money Order Enclosed ☐ MasterCard ☐ VISA ☐ American Express Card

CREDIT CARD NUMBER _____ EXP DATE _____ MO YR

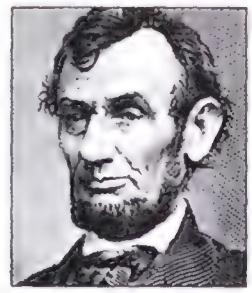
SIGNATURE _____

NAME _____

ADDRESS _____ APT # _____

CITY/STATE/ZIP _____

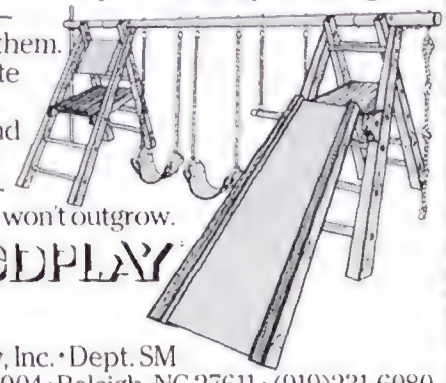
Direct From Woodshop To You!
Enjoy the highest quality redwood furniture at reasonable prices
☐ Chairs ☐ Love Seats
☐ Swings ☐ Tables & more
Free Color Catalog
Adirondack Designs Dept. SN
350 Cypress St, Fort Bragg, CA 95437
Call TOLL FREE: 1-800-222-0343

OWN A PIECE OF HISTORY
We deal in original letters and documents written by famous people. Americans, World Leaders, Scientists, Authors, Artists, Composers and many more.

Call toll-free or send $2 for our catalogue today.
Please include phone number and individuals of interest
American Historical Guild
130 Circle Drive, Suite 200
Roslyn Heights, N.Y. 11577
(516) 621-3051 • 800-544-1947

Charming handcrafted cottages from England's rural countryside. New British Traditions series available.
DAVID WINTER COTTAGES
Send SASE for brochure.
CALL TOLL-FREE 1-800-28GRECO
Greco COLLECTIBLES
P.O. Box 14265, Dept. S
2760-R S. Havana St.
Aurora, CO 80014

World's Largest Bronze Supplier
FREDERIC REMINGTON
BRONZE COLLECTION

"COMING THRU THE RYE". . . . $475
"Lost wax casting"
HENRY BONNARD BRONZE CO. AND ASSOCIATES
4305 S. Highway 17-92
Casselberry, FL 32707
407-339-9103
1-800-521-3179
Call or Write for Free Catalog
Marble bases and shpg. & hdlg. additional

Growth Potential.
Our sets are expandable, so your kids grow with them–not out of them. Call or write for a free catalog, and give your kids something they won't outgrow.

WOODPLAY
Woodplay, Inc. • Dept. SM
PO Box 27904 • Raleigh, NC 27611 • (919)231-6080

INFORMATION
WITHOUT THE OVERLOAD

Join the information revolution at a new Smithsonian exhibition
Information Age: People, Information & Technology
Learn how technology—from telegraphs to microchips—has changed the ways we live.
Talk over the same telephone wire used by Alexander Graham Bell.
Break a code the way the Allies did in World War II.
Produce a segment of the evening news.
It's free, it's fun and it's loaded . . . with information!
10 a.m. to 5:30 p.m. daily
National Museum of American History
Smithsonian Institution
Washington, D.C.

ary biologists and historians of science, to name a few. Or, in the case of Stephen Jay Gould of Harvard University, someone who wears all those professional hats.

Everyone with an interest in the history of life should want to examine these creatures for, arguably, the animals of the Burgess Shale are the world's most important animal fossils (*Highlights continued*, February 1983).

The Burgess Shale fossils are singular in that they represent one of our few insights into the effects of the Cambrian explosion of life-forms, apparently a burst of evolutionary activity that began 570 million years ago.

What is also remarkable about these fossil water dwellers is the state of their preservation, exquisite in detail, which reveals in three dimensions their soft body parts.

But what most recommends the Burgess creatures to us, and to Gould and fellow scientists, is that these animals are downright weird. Five-eyed *Opabinia* sported a long frontal nozzle; the aptly named *Hallucigenia* was stranger still. Both were merely lunch for *Anomalocaris*, the circle-jawed king of the Burgess food chain.

The man who found these animals in 1909, Smithsonian Secretary Charles Doolittle Walcott, saw them as odd but shoehorned them nonetheless into the known forms of arthropods and worms.

This crowd of invertebrates features, along with 20 to 30 kinds that cannot be placed in any modern group, "early representatives of all four major kinds of arthropods, the dominant animals on earth today—the trilobites (now extinct), the crustaceans (including lobsters, crabs, and shrimp), the chelicerates (including spiders and scorpions), and the uniramians (including insects)."

Walcott was wrong in some of his classifications, as paleontologist Harry Whittington discovered when he began to reexamine the shale two decades ago.

These weird animals present strong evidence for a theory that author Gould has advanced for more than a decade—that life advances by fits and starts in an improbable, unreproduceable series of changes. Ours is not Walcott's world of steady advancement from the less superior to the more superior. It is the Burgess Shale's world of strange creatures suddenly come and suddenly gone, their legacy largely erased. If there is an antecedent for humans in this world, it

Here's your chance to achieve a small moral victory.

Gabriel Cortez
Colombia
Age 4

What would you do if you saw a lost, frightened child?

You'd probably stop, pick him up, brush away his tears, and help him find his way. Without even thinking about it. And there's a reason.

You know what's right.

And right now, you can do just that. You can act on instinct...by reaching out to one desperately poor child, thousands of miles away. With your *personal* caring and help.

Through Foster Parents Plan, you'll be helping a child who almost never has enough to eat. A decent place to sleep. Medical care. The chance to learn. Or hope.

It's your choice.

You can even choose the child you'd like to sponsor. A boy or girl. In a country where you'd like to help. You'll be helping that child and his family. And more, helping that family to work with other families in the community to make a better life for their children.

In return, you'll receive pictures of the child. Personal reports from our on-site overseas staff. And letters written in the child's or family's own words. You'll see for yourself just how much you're changing your sponsored child's life for the better. Forever. And for so little.

In fact, for just $24 a month, you'll make it possible for a child to have better nutrition, health programs, schooling – and hope. That's only 80 cents a day. Imagine. Your spare change can change a child's life.

Please don't wait.

If you saw a helpless child on the street, you wouldn't wait. You'd help that instant. Please don't wait now, either. Achieve a small moral victory!

Become a Foster Parents Plan sponsor.
Call 1-800-225-1234 Now.

Foster Parents Plan.
Help so personal, you touch a child for life.

Yes, I want to reach out and make a difference.

K3014B

Enroll me as a sponsor to... (Please indicate the number of children below.)

___ The child who needs my help most.

___ Girl ___ Boy ___ Either

___ SOUTH AMERICA (Colombia, Ecuador, Bolivia)

___ CENTRAL AMERICA/CARIBBEAN (Guatemala, Honduras, El Salvador, Dominican Republic)

___ ASIA (Indonesia, India, Nepal, Philippines, Thailand)

___ AFRICA (Burkina Faso, Egypt, Sierra Leone, Sudan, Togo, Guinea)

Foster Parents Plan.
Help so personal, you touch a child for life

☐ Please send my New Sponsorship Kit with my sponsored child's photo and case history. My check for $24 per child for the first month's sponsorship is enclosed.

☐ I'm not yet sure if I want to be a sponsor, but I'm interested. Please send me information about the child I would be sponsoring.

☐ I can't sponsor right now, but I want to help. Enclosed is a contribution to the Children's Emergency Fund for $ _____.

☐ Mr. ☐ Mrs. ☐ Miss ☐ Ms.

_____

Address _____

City _____

State _____ Zip _____

Mail to: Kenneth H. Phillips, President
Foster Parents Plan
157 Plan Way, Warwick, RI 02886

Foster Parents Plan is the worldwide humanitarian organization linking caring sponsors to needy children and their families overseas. Founded in 1937, we are the leader in combining the best tailor-made self-help programs in health, education and family income with complete sponsor accountability and quality personal communications. Individual sponsors make our work possible and more effective. Non-profit. Non-political. Non-sectarian. Tax deductible. A copy of our financial report is available upon request from N.Y. Dept. of State, Office of Charities Registration, Albany, N.Y., or Foster Parents Plan.

PERSONALIZED CARTOUCHE
Your name or initials translated into ancient Egyptian Heiroglyphics
Free Brochure Available
Cartouche shown "Jane"
18k Gold Pendant from $150
Sterling Silver $40
1-800-237-3358
Discoveries
HANDMADE IN EGYPT

LEATHER BOOK BAG ONLY $179.
Call 1-800-999-1920

Write or Call 1-800-950-2668 FREE CATALOG
Aussie Connection
825 N.E. BROADWAY
Portland, OR 97232
WASHABLE SHEEPSKIN SLIPPERS & BOOTS

Are You as Rich as You Could Be?
Great classical music can add rich new dimensions to your life. Our fun & easy home learning programs bring you everything you need—the finest CDs, tapes, and guidebooks. *For free brochures, contact:*
PERFORMERS' CHOICE
P.O. Box 560, Dept. SM23, Cazenovia, NY 13035
Telephone: 315-655-9796

the Burley Lite Bicycle Trailer
The nation's best selling bike trailer safely carries two children and gear on family outings.
Call or write for free information.
Burley Design Cooperative
4080 Stewart Road, Dept. P
Eugene, OR 97402
503-687-1644
MADE IN USA

Sail a TALL SHIP
Set sail for a week of relaxed fun and enjoy the spectacular beauty of the Maine coast.
Great Ships.
Great Food.
Great Price. $265-550
3 & 6 day cruises
Brochures:
P.O. Box 317S
Rockport,
Maine 04856
MAINE WINDJAMMER ASSOCIATION
Call: 1-800-Maine-80

ADVICE AND DISSENT
They're contentious and contagious. They're the McLaughlin Group. (clockwise from left) Jack Germond, Eleanor Clift, John McLaughlin, Fred Barnes, Morton Kondracke, and Pat Buchanan.
Made possible by a grant from GE.
THE McLAUGHLIN GROUP
Check your local listing for station and time.
We bring good things to life.

is one vaguely boat-shaped and undistinguished Burgess organism whose bodily patterns reveal what may be the forerunner of a backbone.

Wonderful Life does make for a wonderful detective story. The cautious and reserved Whittington and his two graduate students, Derek Briggs and Simon Conway Morris, are the Sherlocks. The case advances, creature by creature, as rock is flaked away from fossil by the point of a needle, and organisms are traced on paper.

This is, in some ways, just the sort of story often told in Gould's popular writing; he has fashioned more than a hundred essays on evolution for *Natural History* magazine. The Burgess Shale suits his view of the "'pageant' of evolution as a staggeringly improbable series of events." And it fits his taste for the "illustration of exciting principles by well-chosen particulars."

Wonderful Life stands apart from those *Natural History* essays in being of a piece. And it profiles work and workers that stand far closer to Gould's own evolutionary perspective than do his other popular single-theme books (*Mismeasure of Man*, on intelligence testing; *Time's Arrow, Time's Cycle*, on changing perceptions of "deep time").

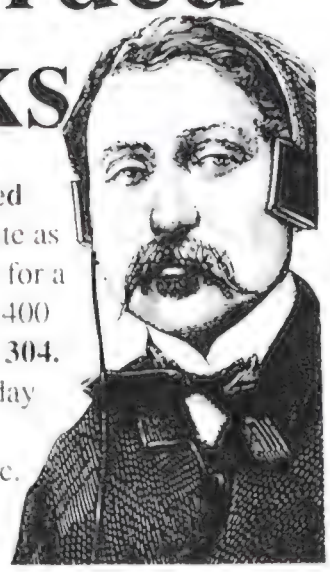
Those of us who, from past reading, warm with the expectation of Gould skewering "cardboard" science or rescuing a misunderstood scientist's reputation have something different coming with *Wonderful Life*. This time Gould is as sunny as George Bailey, hero of Frank Capra's film *It's A Wonderful Life* (to which Gould's title alludes), *after* Bailey has been shown the good that resulted from his role in the contingent history of life.

Gould does rejoice a bit too strenuously. He is uneven in the detail in which he portrays his paleontological pals. Despite his coaxing, many will be daunted by his anatomical descriptions of the Burgess animals. And he tips his hand: "I am about to describe the key moment in this drama."

But his joy in his colleagues' discovery, his conviction about its importance, is contagious. Eat, drink, be merry and smell the Zuzu petals. Tomorrow we'll be Burgess Shale oddities. That's one of the wonderful lessons in *Wonderful Life*.

Don Lessem
Boston author and critic

Recorded Books



Listen to **unabridged** bestsellers on cassette as you drive. Call now for a free catalog of over 400 titles: **1-(800)-638-1304.** Ask about easy 30-day rentals by mail. Recorded Books, Inc. Box 409, Charlotte Hall, MD 20622

Additional reading

Pakistani shipbreakers (p. 30)

Passage To Peshawar by Richard Reeves, Simon and Schuster, 1984

"Letter from Pakistan: Old Tankers Don't Die, They Go to Baluchistan" by John Tarpey, *Business Week*, July 31, 1989

"Pakistan's graveyard of ships sinks with all hands" by Christina Lamb, *Financial Times*, April 21, 1989

Chameleons (p. 44)

"Chameleon: Quick Change Artist" by Roger Caras, *Geo*, August 1979

"Chameleons Use Accommodation Cues to Judge Distance" by Lindesay Harkness, *Nature*, May 26, 1977

"The Locomotion of *Chamaeleo* (*Reptilia: Sauria*) with particular reference to the forelimb" by J. A. Peterson, *Journal of Zoology* (London), Vol. 202, January 1984

Jasper Johns (p. 56)

The Drawings of Jasper Johns by Nan Rosenthal and Ruth E. Fine, National Gallery of Art (Washington, D.C.), 1990

Jasper Johns by Richard Francis, Abbeville Press (New York), 1984

Jasper Johns' Paintings and Sculptures 1954-1974: The Changing Focus of the Eye by Roberta Bernstein, UMI Research Press (Ann Arbor), 1985

Jasper Johns: Drawings 1954-1984 by David Shapiro, Harry N. Abrams, 1984

Media Lab (p. 70)

The Media Lab, Inventing the Future at M.I.T. by Stewart Brand, Viking, 1987

"Inventing the Future" by Edward Dulnick, *New York Times Magazine*, August 23, 1987

"M.I.T.'s Multimedia Marvels: Future

WORLD GLOBES
50 Globe Models Hand crafted solid wood floor mountings. Brass meridians
Prestigious addition to home or office
Desk models available
COLOR CATALOG
$3. Send checks to:
The Home Library, Dept. 19
160 S. University Drive, Plantation, FL 33324
or Call (305) 579-2116

LUXURY YACHT CRUISE
1-800-648-3393
Book individuals or groups on 18-20 Pax
Luxury Trimarans - Largest in the World.
Choice of two beautiful island groups
GALAPAGOS • BRITISH VIRGINS
Trimarine Dept. SM Box 4065 St. Thomas VI 00803

BUSH SHORTS
High Quality/Rugged Construction
Made in the U.S.A.
★ 6 Pockets ★ Olive Drab 100% Cotton
★ Black 100% Cotton ★ White 100% Cotton
★ Khaki 100% Cotton Waist Sizes 26 to 46
CHECK • MONEY ORDER • MC • VISA
1-800-541-2841
P.O. BOX 4035,
DEERFIELD BEACH, FL 33442-4035

$14.95
+ Shipping

REPLACEMENTS, LTD.
A Million Pieces!
Active and Discontinued
China, Crystal and Flatware
To Buy or Sell:
Call (919 668-2064, or write:
302 Gallimore Dairy Rd., Dept SM60A
Greensboro, NC 27409-9723 (SASE Please)

WWII FIGHTER COLLECTION

AUTHENTIC HAND CARVED 12½" AIRCRAFT MODELS
A magnificent array of famous combat planes, hand carved out of solid mahogany and hand painted by expert craftsmen
Call or write for free color catalog
The Kittyhawk Gallery
915 Broadway, Dept. 3
New York, NY 10010
212-529-1144

This famous cologne, specially blended in 1981 to celebrate the royal wedding of Prince Charles and Princess Diana, has now become a national favourite. Send $3 for a sample and our illustrated catalogue.
PERFUMERS · ESTABLISHED 1875
GEO F. TRUMPER
Curzon Street Mayfair London W1 England

The J. Peterman Catalogue. (No. 6) Summer '90.

© 1990 The J. Peterman Company

S6
Catalogue to _____ name
_____ address
_____ city state zip
The J. Peterman Company
2444 Palumbo Drive
Lexington, Kentucky 40509
(800) 231-7341

W. Graham Arader III

❊

wants to buy

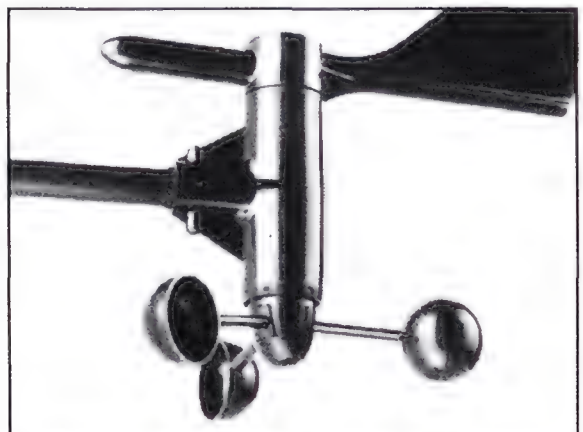
❊

Audubon, Rare Maps, Redoute, Catlin, American Paintings,

Bodmer, Rare Books, Autographs, Currier & Ives and Botanicals.

❊

Send or call for free estimate
1000 Boxwood Court
King of Prussia
Pennsylvania 19406
Phone (215)825-6570
Send $5. for current catalogue



PROFESSIONAL QUALITY WEATHER STATION NOW AFFORDABLE ENOUGH FOR HOME USE!

The new WeatherPro weather station uses state-of-the-art technology to give you full monitoring capability at an incredibly low price. The WeatherPro includes a weather computer, remote precision wind direction vane, wind speed sensor, external temperature probe, mounting hardware and 40' of cable-**all for only $179!**

- •WIND SPEED
- •TEMPERATURE
- •WIND DIRECTION
- •TEMPERATURE HI/LO
- •RAINFALL (OPTIONAL)*
- •WIND GUST
- •WIND CHILL
- •TIME
- •AUTO SCAN
- •1 YEAR WARRANTY

•14-DAY MONEY-BACK GUARANTEE

DIGITAR WEATHERPRO
WEATHER STATION: ONLY $179!
ORDER TODAY:1-800-678-3669, SM
M-F 7AM-5:30 PM Pacific Time

*Automatic-emptying electronic rain gauge-$49.95
Add $5.00 for shipping. CA residents add sales tax.
Fax 1-415-732-9188 • M/C and VISA

DIGITAR®
3465 DIABLO AVE, HAYWARD, CA 94545

Schlock" by David Nyhan, *Washington Journalism Review*, April 1988
"A Bauhaus for the Media Age" by Hugh Aldersey-Williams, *New Scientist*, March 11, 1989

Ellis Island (p. 88)
Keepers of the Gate: A History of Ellis Island by Thomas M. Pitkin, New York University Press, 1975
Ellis Island, Statue of Liberty National Monument Historic Resource Study (3 vols.) by Harlan D. Unrau, U.S. Department of the Interior/National Park Service, 1984
Ellis Island by Wilton S. Tifft, Contemporary Books (Chicago), 1990
Ellis Island: Echoes From A Nation's Past, edited by Susan Jonas, Aperture Foundation (New York), 1989

Rotisserie League Baseball (p. 100)
Rotisserie League Baseball, edited by Glen Waggoner and Robert Sklar, Bantam, 1989
How to Win at Rotisserie Baseball by Peter Golenbock, Vintage, 1987
The Fantasy Baseball Abstract 1990 by Wayne M. Welch, Perigee, 1990
Patton's 1990 Fantasy Baseball Price Guide by Alex Patton, Fireside, 1990

Washington National Cathedral (p. 116)
For Thy Great Glory by Richard T. Feller and Marshall W. Fishwick, Community Press (Culpeper, Virginia), 1965
Completing Washington Cathedral For Thy Great Glory by Richard T. Feller, Washington Cathedral, 1989
Guide to Washington Cathedral, edited by Nancy S. Montgomery, National Cathedral Association (Washington, D.C.), 1965
Gothic Art by Andrew Martindale, Thames and Hudson (New York), 1967

Five of Hearts (p. 132)
Henry Adams: Novels, Mont Saint Michel, The Education by Henry Adams, edited by Ernest Samuels and Jayne N. Samuels, Literary Classics of the United States (New York), 1983
Clover by Otto Friedrich, Simon and Schuster, 1979
Clarence King: A Biography by Thurman Wilkins, University of New Mexico Press (Albuquerque), 1988
Henry Adams by Ernest Samuels, Belknap Press of Harvard University Press, 1989
John Hay: The Gentleman as Diplomat by Kenton J. Clymer, University of Michigan Press, 1975

HEART PIN 1⅛"×1½"
#C-17, sterling: $38 ppd.
14K: $148 ppd. (Matching earrings also avail.) Gift boxed, satisfaction guar. MC, VISA, AMEX, ck or M.O.
TORYS
1-800-67-TORYS, M-F, 9-5, EST, Catalog upon request
106 Washington St., Dept. S, Marblehead, MA 01945

SMITHSONIAN SUBSCRIBER SERVICE

In order to:

- Change your address
- Inquire about . . .
  The status of your membership-subscription
  Dues payments
  Gifts
- Report missing issues or membership cards
- Correspond about related matters

Please write to our computer data center where all these records are maintained and processed:

SMITHSONIAN MEMBERSHIP-SUBSCRIPTION DATA CENTER

MEMBERSHIP DATA CENTER
P.O. BOX 55593
BOULDER, CO 80322-5593
TELEPHONE (303) 449-9609

TO CHANGE YOUR ADDRESS–

Send us an address label from a recent issue together with your new address.

Smithsonian highlights

Planning a Smithsonian visit?

Information about current and upcoming exhibitions and events, as well as the Associates' Planning Packet, are yours for the asking. Send a postcard to Associates' Reception Center, Smithsonian, Washington, D.C. 20560, or call (202) 357-2700. For hearing-impaired visitors, use TDD and call (202) 357-1729. Begin your visit at the Associates' Reception Desk, located in the Smithsonian Castle.

Castle reopens, Freer remains closed

The Castle has reopened with a new Smithsonian Information Center and Associates' Lounge. Hours are 9 A.M.-5:30 P.M. daily. The Freer Gallery of Art is closed until 1992.

Festival of American Folklife

The Smithsonian's 24th annual celebration will be held on the Mall, June 27-July 1 and July 4-8, from 11 A.M. to 5:30 P.M. This year's festival will focus on the U.S. Virgin Islands and the country of Senegal. For information, call 357-2700.

Musical Matinee

On Sunday, July 15, the Friends of Music at the Smithsonian will sponsor a private concert and luncheon at the estate of Smithsonian Secretary Emeritus S. Dillon Ripley and Mrs. Ripley, in the Litchfield Hills of northwestern Connecticut. This gathering of friends for fine food and music will feature a performance by the Castle Trio on period instruments. Proceeds will benefit the Smithsonian's Division of Musical History. Seating is limited. For information or reservations, write to: Musical Matinee, NMAH/R. 4123, Smithsonian, Washington, D.C. 20560.

Special June exhibits and events

Cooper-Hewitt Museum (New York)
Flora Danica *and the Heritage of Danish Porcelain, 1790-1990* (through September 2) Two hundred years of Danish design. See *Highlights continued*, page 164.
Color, Light, Surface: Contemporary Fabrics (through September 23) Textiles crafted during the last decade.

National Museum of Natural History
Life in the Ancient Seas A major new installation, showcasing 2,000 fossils and featuring a diorama of a 230-million-year-old reef.
Gorilla: Struggle for Survival in the Virungas (June 15-August 12) Photo-

HONG·KONG·HOLIDAY

"WE STARTED OFF WITH A LITTLE NIGHT MUSIC."

"Hong Kong's nightlife has a character all its own. We found a unique combination of east and west, traditional and contemporary.

Our first encounter with this paradox was an experience I'll never forget. We started off with a little night music, as we unexpectedly found ourselves in the midst of a Chinese Opera in the street. It was an impromptu affair with actors portraying a tale of the last Ming princess.

Just beyond, Temple Street Night Market beckoned. The best bargains by far were the fortunes told by an educated bird who selected each client's destiny from a pile outside her cage. (I seriously hope she didn't mean 10 children!)

Each day offered such diversity. Fascinating temples and outlying islands were complemented by an international symphony concert and a candle-lit dinner on an elegant harbour cruiser. My list of favorites goes on and on. Just like the magic of Hong Kong."

"To enjoy all the sights and excitement of this great city, we'd recommend that when you plan a trip here, you should ***stay an extra day****."*

HONG KONG
Stay an extra day

Yes! Tell me more about why I need to stay an extra day here

Name _____

Address _____

_____

_____ *Zip.* _____

Mail to: Hong Kong Tourist Association, P.O. Box 7720, Itasca, Illinois 60143-7720

Great Art for All Who Love It!

Exact replicas *on canvas* of oil painting masterpieces that recreate the texture, colors and detail of the originals. Our replicas are the compact discs of fine art reproductions. You must see them!

THE MASTERS' COLLECTION, our 100 page **full color** Catalogue of over 370 ***elegantly framed*** Portraits, Impressionists, Florals, Nauticals and more - *$5.00.*

Credit card orders, call **1-800-2-CANVAS, ext. 232**
Or, send check, m.o. or MC/Visa, Am.Ex.
(Card name, #, exp. date) to:

H.A. DeNUNZIO Co., Inc.,
Box 11-7540, Dept. 232, Newington, CT 06111

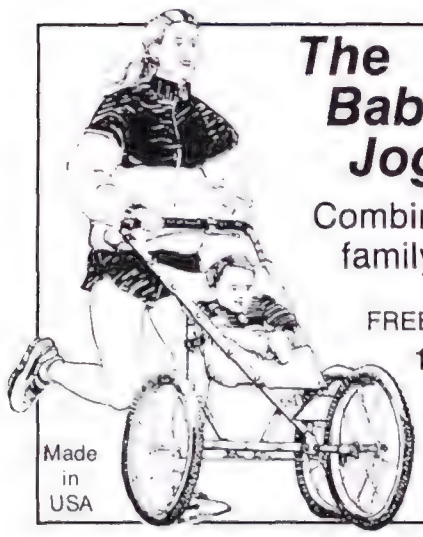
Sensational Summer

Unwind!
Relax!
Enjoy!

THE TIDES INN
"One of America's Finest Small Resorts"
Irvington, VA 22480 1-800-TIDES INN

JAPANESE SWORDS WANTED
ARMOUR, ANTIQUE JAPANESE GUNS, ETC.

AOKI CO., TOKYO, JAPAN – NOW HAS OFFICES IN U.S.
Highest Prices Paid!
Japanese Price Much Higher Than U.S. Price.
We will exceed all legitimate offers. Try us!
AOKI CO., LTD.
23441 GOLDEN SPRINGS, SUITE 292
DIAMOND BAR, CA 91765
Phone: 714-860-5137 • 1-800-232-2654



The Baby Jogger®
Combine fitness, family and fun!
FREE BROCHURE
1-800-548-7230
ext. 25
Racing Strollers Inc.
516 N. 20th Ave.
Yakima, WA 98902
Made in USA

KITES
FREE COLOR CATALOG
Choose from over 100 exciting kites.
• Many unusual & innovative designs.
Call or write for your catalog today!
Into The Wind • (303) 449-5356
1408-R Pearl St., Boulder, CO 80302

graphs taken in Uganda by Nick Nichols.
Twentieth-Century Dinosaurs (through August 10) Life-size models by sculptor Jim Gary.
Dinamation's Dinosaurs, Alive and in Color (through September 3) A menagerie of 18 animated robotic dinos (admission fee).

Renwick Gallery
Four Contemporary Calligraphers (through October 28) English, Chinese, Arabic and Hebrew manuscripts.
Tradition and Innovation: New American Furniture (through September 3) An overview of creations by 25 artisans.

National Museum of American History
Information Age: People, Information and Technology A major new permanent installation traces the 150-year history of information technology.
Go Forth and Serve: The History of the Black Land-Grant Colleges (through October) A 100th-anniversary commemoration of these 17 colleges.
Varrio San Jose: Scenes from an Urban Chicano Experience (through June) Documentary images by Miguel Gandert.

National Museum of African Art
Yoruba: Nine Centuries of African Art and Thought (through August 26) Masterworks of Yoruba artists from Nigeria and Benin, 12th century to the present.
Icons: Ideals and Power in the Art of Africa (through September 3) A survey of African art.

Arthur M. Sackler Gallery
Yokohama: Prints from Nineteenth-Century Japan (through September 9) Eighty-five color woodblock prints.
The Noble Path: Buddhist Art of South Asia and Tibet (through September) More than 100 objects reflecting the changing imagery of Buddhism.

National Museum of American Art
Albert Pinkham Ryder (through July 29) A retrospective on America's "greatest painter of the imagination."
Irving Penn: Master Images (through August 19) A selection of 60 photographs.

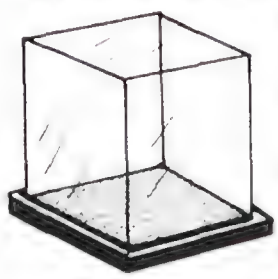
National Portrait Gallery
The Five of Hearts (June 9-November 4) Portraits of a 19th-century circle of friends, including Henry Adams and his wife, Clover. See page 132.
Working for Time: The Covers of Robert Vickrey (June 9-November 4)

Call/Write for Free Catalog
ACCESS Maps & Gear
321 S. Guadalupe, S4 Santa Fe, NM 87501
505 988-2442

Actual Size

Duck Pin
Hand cast and finished in antique sterling silver.
14K gold with genuine ruby eye.
Gift boxed. Satisfaction guaranteed.
Silver $40 #SD101 - Gold $260 #DG511
Plumtree & Smith Ltd.
3958 Northlake Boulevard - Dept. H #243
Palm Beach Gardens, FL 33410
407-687-2457 Visa-M/C-Check-Money Order

DISPLAY CASES



PROTECT AND DRAMATIZE YOUR PRECIOUS WORK OF ART
CUSTOM MADE
clear lucite on a finished wood base
SEND DIMENSIONS • LENGTH • WIDTH AND HEIGHT • WE WILL QUOTE PRICE
FOR ESTIMATE OR ADVICE
CALL 804-442-2299
OR WRITE
THE DISPLAY CASE CO.
Box 8800, Exmore, VA 23350
SATISFACTION GUARANTEED

One of America's Largest Fine Watch and Jewelry Discounters

SAVES YOU UP TO 50%
ROLEX • AUDEMARS
PATEK • CARTIER • ETC
DIAMONDS & PEARLS
SALES • SERVICE • ACCESSORIES
815 Connecticut Ave. N.W.
SUITE 204
Washington, D.C. 20006
202/331-0671
800/654-7184
MARCUS & CO.
ELEGANT PRICE CUTTERS SINCE 1967
Free Shop at Home Catalogue

THE BEST UNDERSTATEMENT EVER MADE.

Quality fabrics, colors, patterns. Sea-island cotton* boxer shorts you can't buy in stores. For exclusive brochure:
THE GREEN POND COMPANY
Dept. GP-3 3060 Peachtree Rd., Atlanta, GA 30305, 1-800-827-POND

GALAPAGOS
You, 9 other adventurers and our licensed naturalist will sail by yacht to explore more islands than any other Galapagos expedition.
50 Trip dates. Machu Picchu Option.
FREE BROCHURE
INCA FLOATS 415-420-1550
1311S 63rd ST, EMERYVILLE, CA 94608

Portraits of subjects from Nelson Rockefeller to John Updike.
Irving Penn: Master Images (through August 19) Sixty portraits from the NPG collection.

Hirshhorn Museum & Sculpture Garden
Bay Area Figurative Art, 1950-1965 (June 13-September 9) More than 60 paintings by such artists as Richard Diebenkorn and David Park.
Dennis Adams: WORKS (through July 8) The New York artist's installation of "alternative histories."

National Air and Space Museum
Drawings and Things by Rowland Emmett (through December) A lighthearted look at airplanes and spacecraft.
Beyond the Limits: Flight Enters the Computer Age A new gallery explores the computer revolution in aerospace.
Modern Carrier Aviation: Seapower in a Changing World (indefinite) A look at technology's impact on the aircraft carrier.

Exhibition catalogs

Catalogs available currently include:
Albert Pinkham Ryder ($29.95, paper; $55, cloth)
New American Furniture ($19.95, paper)

To order, send check or money order to Museum Shops, 3301 75th Avenue, Landover, Maryland 20785. Include 15 percent of total purchase to cover postage and handling (minimum, $1.75).

Smithsonian on the air

Radio Smithsonian: Features include stories on restoration ecology, songwriters Allan and Marilyn Bergman, basketball star Kareem Abdul-Jabbar.
Here at the Smithsonian: Three-minute TV spots take you behind the scenes.
To find out which stations in your area carry these radio and TV programs, write: Office of Telecommunications, MAH Room BB40, Washington, D.C. 20560.

Lecture and Seminar Program

The Program hosts events in Hattiesburg, Mississippi, June 14-16; Santa Rosa, California, June 22-24; and Boone, North Carolina, June 28-July 1.

For further information, write or call U.S. and International Events Program, 480 L'Enfant Plaza S.W., Suite 4210, Washington, D.C. 20560; (202) 287-3210.

Resident Associate Program

To become a Resident Associate, or for fee and ticket information, call 357-3030.
The Kontra Quartet (June 5; 8 P.M.) The State Chamber Ensemble of Denmark makes its Washington debut.

Smithsonian Institution Traveling Exhibition Service

SITES organizes and circulates exhibitions to cities throughout the United States and abroad. To sponsor a show in your community, write SITES, Smithsonian, Washington, D.C. 20560. Here are some June exhibits:
Bakersfield, California (June 16-July 22) *The Legacy Endures: Conserving Wetlands and Waterfowl*, California Living Museum.
Hot Springs, Arkansas (June 9-August 5) *ZooArk*, Mid-America Museum.
Jersey City, New Jersey (June 2-July 1) *Remaking America: New Uses, Old Places*, Liberty State Park.

Sacred Gods of Ancient Egypt

'THOTH', God of the moon, speech and magic. The divine scribe was present at all funeral ceremonies to record the deeds of the deceased before being placed on the scales with the feather of truth. Height 12"

'RA HARAKHTE' was the sun god of Heliopolis. Called father of all gods, he ruled during a golden age and was revered for the light at the dawning of each day. Height 11-1/2"

'HATHOR' acclaimed goddess of love, joy and was mistress of merriment, dance and music. When a child was born, seven Hathors, at bedside, decided the future of the infant. Height 11-1/2"

'KHNUM' was in some traditions the maker of earth, water and the underworld. He created both god and men; he fashioned men from clay on a potter's wheel. Every child born was formed by his hand. Height 11-1/2"

'ANUBIS' was guardian of the dead and their possessions. After the funeral ceremony, Anubis introduced the deceased into the presence of sovereign judges, where the soul would be weighed. Height 11"

Artisans Guild offers these replicas in cultured marble, gold leafed and meticulously hand detailed for $75 each, or the set of five for $350. Orders are sent prepaid with a catalog of out standing historical collectables. Satisfaction guaranteed or full refund.

Toll free Visa, MasterCard phone orders:
U.S. & Hawaii **1-800-231-4921**
California **1-800-231-6334**

ARTISANS GUILD INTERNATIONAL 1-14
5610 S. Soto St., Bldg. 'C' Huntington Park, CA 90255

☐ Set of 5 Gods $350.00 ☐ Catalog only $5.00 (apply to first order)
☐ 'THOTH' $75.00 ☐ 'RA HARAKHTE' $75.00
☐ 'HATHOR' $75.00 ☐ 'KHNUM' $75.00
☐ 'ANUBIS' $75.00

☐ Visa ☐ MC Exp. Date _____
Card # _____
Name _____
Address _____
City, State, Zip _____

Table service fit for a king– and a queen

Flora Danica compendium, title page shown here, inspired porcelain creations.

Tuberous thistle adorns oval platter; tureen is painted with Alsike clover.

Covered tureen is ornamented with the scarlet cup mushroom on lid, Alpine larkspur on the bowl's side.

Images of a foliose lichen, also called rock tripe, appear on a plate and in the pages of *Flora Danica* manuscript.

Among the 18th century's most impassioned botanical enthusiasts was Denmark's Crown Prince Frederik. In 1790 he set in motion an enterprise that would meld botanical knowledge with artistry of the highest order.

The future monarch commissioned the creation of an extraordinary dinner service—porcelain pieces adorned with images of plant specimens, hand-painted and rendered in exquisite detail. The source of the images was the *Flora Danica*, a celebrated compendium of botanical illustrations. This encyclopedia, one of the treasured productions of Enlightenment Europe, documented the flowers and mosses, ferns and fungi native to Denmark and its possessions (Norway, Greenland, Iceland and the Faroe Islands).

The folio sheets of that work were dispatched from the king's librarian to the workshops of the Royal Copenhagen Porcelain Manufactory. There, scores of artisans, relying on the original copperplate engravings as models, reproduced a series of cherished plants on platters and cups, tureens and bowls. (The firm continues to produce the dinnerware today.)

Original pieces from the legendary table service constitute the centerpiece of "*Flora Danica* and the Heritage of Danish Porcelain, 1790-1990," at the Smithsonian's Cooper-Hewitt Museum in New York. Organized to honor Queen Margrethe's 50th birthday and to commemorate the 200th anniversary of the pattern, the exhibition also contains masterpieces of Danish porcelain craftsmanship over two centuries. The show continues through September 2.
Kathleen M. Burke

Reserved For Those Who Have Earned Their Stripes.™

Lark

The Smithsonian Traveler

THE LATEST WORD ON TOURS, EXPEDITIONS AND LEARNING ADVENTURES

Smithsonian "Anytime" Weekend
Explore Washington, D.C.'s museums; enjoy a "Castle" tour; see "Dinosaurs Alive and in Color" through Labor Day.

Domestic Study Tours

Salmon River Rafting *July 18-26*

Grand Canyon Rafting *July 27-August 5*

NEW Aspen, Colorado *July 28-August 2*

Lewis and Clark *August 5-12* Horseback camping on the 1805 trail in Idaho.

Baseball Nostalgia *August 13-19* Chicago, Detroit and Cleveland; *September 5-11* Boston, New York and Baltimore.

Waterton-Glacier *August 22-September 1* Hike in Montana and Canada.

Arches and Canyonlands *September 1-8*

Delta Queen *September 4-12* Cincinnati to Chattanooga.

Maine Hiking *September 9-18*

NEW America's Maritime Heritage *September 11-22* Cruise from Boston to Washington, D.C. on the *Nantucket Clipper.*

Historic Philadelphia *September 13-16* Includes Barnes Foundation, Society Hill.

Grand Canyon Weekend *September 13-16 or 27-30* Hike with a naturalist.

Wild California *September 16-25* From Big Sur to Yosemite.

Columbia River Cruise *September 20-30*

Detroit Auto Barons *September 27-30* Visit grand estates, Henry Ford Museum.

San Antonio and Austin *October 6-13*

NEW Chesapeake Birds *October 6-13*

NEW California's Channel Islands Cruise *October 8-13 or October 15-20*

Bryce, Zion and the North Rim *October 9-19* Stay in rustic lodges.

NEW Sapelo (Georgia) *October 11-15* Explore this barrier island near Savannah.

Foreign Study Tours

European Countryside Programs *June-October* Relax in Austria, Denmark, England, France or Hungary.

Lake District Walks *June 28-July 9* Walks and hikes through northwest England.

Galápagos Islands and Quito *July 1-12*

Scotland by Train *July 5-18*

NEW Mediterranean Cruise *July 12-23* Istanbul, Rhodes, Crete, Santorini.

England for Families *July 16-26*

NEW Edinburgh Music Festival *August 12-22*

St. Lawrence *August 16-27* Quebec, Montreal and Toronto with a four-day cruise through the Thousand Islands.

Volga Cruise (USSR) *August 18-September 6*

Byzantium Voyage *August 20-September 4* Venice to Istanbul on the *Argonaut.*

Eastern Turkey *August 29-September 15*

Golden Ring (USSR) *September 1-15* Old Russian towns.

NEW Rhineland *September 6-18* Cologne, Heidelberg and a five-day river cruise.

Indonesia *September 6-27*

Central Asia (USSR) *September 7-20*

NEW Three Republics (USSR) *September 9-23* Russia, Georgia, Estonia.

English Canals *September 11-23*

Yugoslavia *September 11-23*

NEW Spain *September 11-23*

NEW Glasnost and Perestroika (USSR) *September 12-23* Study current affairs.

Switzerland by Train *September 12-24*

Ireland Walk *September 18-28*

Rhône Cruise *September 18-October 2* Provence, Burgundy, Paris.

NEW Modern Masters in the South of France *September 30-October 10*

Brazil *October 1-18* Includes Rio de Janeiro, Brasília, São Paulo and Iguaçu Falls.

Cotswold Walks *October 4-16*

NEW Gardens of Eastern Europe *October 5-19*

Turkey and Greece *October 10-23* Cruise aboard the tall ship *Sea Cloud.*

NEW Splendors of South China Seas *October 11-31* Hong Kong, Thailand, Java, Bali.

Australia *October 13-30*

Japan *October 15-27*

Folk Art and Celebrations of Colonial Mexico *October 27-November 8*

Interludes *November-April* Uncrowded museums, cultural events and leisurely exploration in London, Venice, Munich, Prague, Paris, Lisbon, Vienna, Hong Kong, Kyoto.

Christmas Abroad Special programs in Canterbury, York and Edinburgh, Switzerland and St. Kitts; or cruise the Virgin Islands.

South America Adventure *January 3-23* Cruise around Cape Horn on the *Seabourn Pride.*

India Wildlife *January 13-February 7*

Yucatán Adventure *January 16-28*

USSR Performing Arts *January 18-31* See the Kirov and Bolshoi ballets.

Kenya-Tanzania *January 24-February 10* Visit Masai Mara Game Reserve and the Serengeti Plain with expert guides.

Countryside Tours *February-September* Relaxing sojourns in Mexico, Greece, Italy, France, England, Switzerland, Austria, Wales, Czechoslovakia and Germany.

Smithsonian Seminars

Explore diverse topics in depth with top scholars during classroom study and tours.

Trinity College (Ireland) *August 11-25* Study Irish art and architecture.

NEW Rome *September 13-25*

Oxford-Smithsonian (England) *September 15-29* Live at historic Worcester College. Choose among ten courses.

Write to Smithsonian National Associate Program, Washington, DC 20560 or call (202) 357-4700 for tour and seminar brochures.

SMITHSONIAN-STYLE

Aircraft Restoration *September 24-27* Learn professional techniques from expert craftsmen at the Air and Space Museum's Paul E. Garber facility near Washington, D.C.

Highlights of Austrian Civilization *October 6-7* Live in a restored castle in Salzburg; visit Vienna.

NEW **American Folk Art** *October 9-12* Washington, D.C. Visit museum exhibitions and private collections.

NEW **Chesapeake Bay Ecology** *October 14-18* Annapolis. Learn at the Smithsonian's Environmental Research Center.

The Art and Craft of Creative Writing *October 14-18* Annapolis. Stay at a historic inn; study and write with SMITHSONIAN columnist Edwards Park.

Santa Fe *October 28-November 2* Study art, archaeology or literature.

Eygpt *November 16-December 1* Classes in Cairo; cruise on the Nile.

The Venetian Tradition *January 15-18* Washington, D.C. See Titian and Van Dyck exhibitions at the National Gallery of Art.

Research Expeditions

Contribute your talent and financial resources to Smithsonian research. Work with curators in Washington, D.C. or at field sites worldwide.

Montserrat *July 1-14, 15-28 or July 29-August 11* Excavate a sugar plantation.

Cody, Wyoming *July 15-28* Collect plant fossils near Yellowstone.

Cheyenne, Wyoming *July 18-30* Document the annual Frontier Days rodeo.

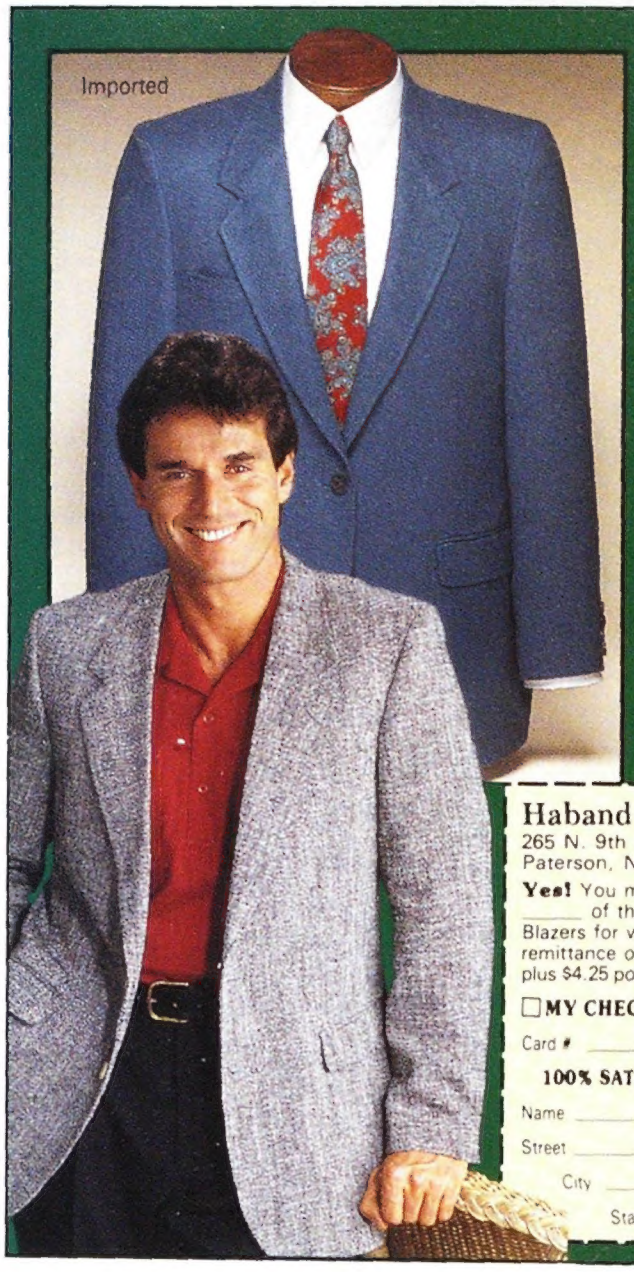
Washington, D.C. *July 22-August 4* Archive historic aviation documents.

New York City *August 1-11* Reconstruct Caribbean pottery.

Orofino, Idaho *September 11-21* Record Lumberjack Days festivities.

Washington, D.C. *October 28-November 3* Learn about electronic photography as you transfer still photos to videodisks.

(202) 287-3210 for expedition brochures.



Gentleman's Choice Traditional

BLAZER

Fine Italian blend of linen, polyester, and acrylic. "Only the Best" tailoring details include today's natural shoulder silhouette, front darts for subtle shaping, deep, comfortable hand-sewn armholes, piped French-faced full lining, ample pockets (3 outside and 3 inside), felt-faced undercollar, four-button cuffs, center back vent.

Single Price 39.95* 2 for 79.50 3 for 119.00

FIND YOUR SIZE HERE, then complete order form
SHORT (S): 36 38 40 42 43 44 46 48*
REG. (R): 38 39 40 41 42 43 44 46 48* 50* 52* 54*
PORTLY REG. (RP): 46* 48* 50* 52* 54*
LONG (L): 42 44 46 48* 50* 52* 54*
*These Big Men's & Portly Sizes: ADD $5 EACH

Haband
265 N. 9th Street
Paterson, NJ 07530

Yes! You may send me _____ of these handsome Blazers for which I enclose remittance of $ _____ plus $4.25 postage & handling.

23E	Color	WHAT SIZE?	S, R, RP or L LENGTH?	HOW MANY?
A	BLACK/WHITE			
B	NATURAL TAN			
D	CLAY			
E	CADET BLUE			
F	DUSTY GREEN			

☐ MY CHECK ENCLOSED ☐ Visa ☐ MasterCard

Card # _____ Exp. date ____

100% SATISFACTION GUARANTEED OR MONEY BACK ANY TIME!

Name _____

Street _____ Apt # ____

City _____

State _____ Zip _____ 7PG-23E

Join the Lalique Society of America and live with a goddess..

The Lalique Society of America announces its new 1990 limited edition design, Hestia the Greek goddess of the hearth. It is available only to members.

Join this exclusive association and Hestia can grace your home along with the quarterly LALIQUE magazine, exclusive gifts, and invitations to special Society events.

Hestia paperweight. $295
Height 5½"

Annual membership is $30. Check the appropriate box and mail the coupon. Or, call 1-800-CRISTAL.

☐ Charge my MC, Visa, Am Ex.

Card #_____

Expiration _____

☐ Accept my check.

☐ Send me more information.

Name _____

Address _____

City _____ State _____ Zip _____

LALIQUE
SOCIETY OF AMERICA

11 East 26th Street
New York, N.Y. 10010

S6

By Barbara Kingsolver

Ah, sweet mystery of... well, not exactly love

My husband was watching UCLA play Duke in the NCAA playoffs. He was rooting for UCLA. I was confused. "Two weeks ago you were calling UCLA a bunch of galoots. You said they couldn't hit the side of a barn."

"Two weeks ago they were playing *us*. But now Arizona's out of the tournament," he said, in that masculine sort of voice that can make any wild thing sound reasonable.

"But it's the same players," I pointed out. Once a galoot, always a galoot, it would seem to me. Nobody changes *that* much in two weeks, barring a religious experience or steroids.

He patiently explained the hierarchy of loyalties: first you root for your home team. Then, if they're out of the picture, you root for other members of your conference.

"Even the Sun Devils?" I asked, dismayed. Based in Phoenix, the Devils are our team's nearest and bitterest rivals. The peak experience for a Devils fan is to sneak into Tucson and paint some important civic landmark, such as the mayor, in their school's colors.

"If the Devils were the only Pacific 10 team left in the tournament, then sure, I'd want them to win."

"Why?" I asked, baffled. Was this one of those mysteries withheld from women but revealed to men in their tender boyhoods, along with oil level versus oil pressure, and how to believe you still look fine in a swimsuit once you've acquired love handles?

I would find out. I phoned a friend who has season tickets and wouldn't for love nor money miss an Arizona Wildcats game. And who is female. "Oh, no, I'd never root for the Sun Devils," she said without hesitation. "As far as I'm concerned it's Arizona or nobody."

Why? "It's a personal thing," she explained. "A relationship. After watching those 6-foot-10-and-still-growing boys play ball every Thursday night, you feel you know them. It's like they're your kids." She paused; her tone was not all that maternal. "And let's face it," she added, "they've got great buns."

Her husband didn't share this outlook. "Oh, sure, he roots for other PAC 10 teams when they're not playing the Wildcats," she said with a hint of scorn. "He'll root for anybody."

What is loyalty worth, if it's situational? This trend I was uncovering among male sports fans reminded me of the popular song that suggests, if you can't be with your sweetie, you should love the sweetie who's handy. Whatever happened to "I'd rather be blue over you than be happy with somebody else"? But things like loyalty and territorial attachment probably are situational, from Candlestick Park to the Halls of Montezuma and throughout the animal kingdom. Even my dog, whose species has cornered the loyalty market, shows this weakness. Granted, her pedigree isn't flawless; she's half coyote. Her coyote instincts serve her well, steering her clear of what Darwin liked to call "nature red in tooth and claw"—which out here means prickly pear and rattlesnake fang. She even runs congenially with small packs of coyotes, until she gets within a stone's throw of the house. Then she whirls around and makes a great show of chasing her erstwhile friends out of the territory. I've watched this happen dozens of times. One could argue conflicting genetic paradigms. Or one could argue Dog Chow. Either way, Fido is an infidel.

It gets worse. Years ago, as a student of animal behavior, I helped do a study of desert pupfish, a small, unglamorous species whose mating behavior is so opportunistic as to make Jim Bakker blush. They live in ephemeral streams where populations fluctuate. When the census is low and mates are scarce, the male will hunt down a bride and swim faithfully by her side, for richer or for poorer, monogamous as Bob Cratchit. But when the tide turns and there's a surplus of amorous possibilities, every model-husband pupfish becomes a small macho terror. He puffs out his little blue fins and claims a patch of river bottom as his bachelor pad, performing all manner of gyrations to lure in the ladies, who eventually do meander in to lay their eggs. Probably they are rolling their eyes, muttering to one another about midlife crisis and the trophy wife. Darwin was right; nature is no picnic. It's an office party.

Back in our den, the game was winding up. I curled up next to my mate and asked, "If I weren't around, would you go for my cousin Elizabeth? Just think about it—we're related, we share a lot of the same genes; we're members of the same conference, you could say." Elizabeth is a blue-eyed version of Sonia Braga. My husband is a smart man. He gave me a hug and answered, "Don't be ridiculous."

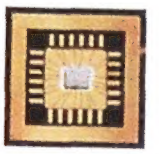
UCLA lost, leaving nary a PAC 10 team in the tournament. The Wildcats are home in their lair. The Sun Devils can get out their paint cans and connive new graffiti. There may be no joy in Mudville, but at my house all is right with the world.

ACTUAL SIZE.

Panasonic introduces a pocket cordless phone with a new look, a new size and a new noise reduction system: Sound Charger™.

If you can't believe your eyes, just wait until you hear it.

This cordless is designed with our Sound Charger noise reduction system. It's a double filter system with two microprocessors. One in



the base unit, the other in the handset. They're designed to filter background noise and amplify a caller's voice. So your conversations come through loud and clear.

The new Panasonic KX-T4000 is engineered with two dialing pads. It's like owning two phones. Dial from the speakerphone base or the handset.

There's also 10-channel selectable switching from the handset. So you can always speak on the clearest channel. There's speed dialing and a battery you replace yourself. Even a fully charged spare battery in the base. All in a phone that folds in half and fits in your shirt pocket.

Heard enough? Then pick up the new cordless phone with Sound Charger. The size will amaze you. The sound will astonish you.

This phone is tone/pulse switchable and is capable of accessing tone-actuated computer systems.

THE ACTUAL SOUND IS EVEN MORE ASTONISHING.

Panasonic

just slightly ahead of our time.

All of GM, going all out for you.

"My favorite GM car I worked on was the '54 Buick. Got one for myself and kept it all these years, even after I retired. Every time my son looks at it, he smiles. Very popular at the time, I tell him.

My boy's at GM now, building beauties like this Olds. And though most things have changed, one thing hasn't—we still build 'em to last."

Fact: GM cars have held their resale value better than any other U.S. make based on average value of 3-to-5 year old cars over the past nine years.

Oldsmobile Cutlass Supreme International Series
1954 Buick Skylark

GM
MARK OF EXCELLENCE

Chevrolet, Pontiac, Oldsmobile, Buick, Cadillac, GMC Truck